



**HAL**  
open science

## **cIMPACT-NOW (the consortium to inform molecular and practical approaches to CNS tumor taxonomy): a new initiative in advancing nervous system tumor classification**

David N N.Louis, Ken M Aldape, Daniel J. M Brat, David N Capper, David N Ellison, Cynthia M Hawkins, Werner N Paulus, Arie Perry, Guido N Reifenberger, Dominique N Figarella-Branger, et al.

### **► To cite this version:**

David N N.Louis, Ken M Aldape, Daniel J. M Brat, David N Capper, David N Ellison, et al.. cIMPACT-NOW (the consortium to inform molecular and practical approaches to CNS tumor taxonomy): a new initiative in advancing nervous system tumor classification. *Brain Pathology*, 2016, 10.1111/bpa.12457 . hal-01480029

**HAL Id: hal-01480029**

**<https://amu.hal.science/hal-01480029v1>**

Submitted on 10 Mar 2017

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## MISCELLANEOUS

## **cIMPACT-NOW (the consortium to inform molecular and practical approaches to CNS tumor taxonomy): a new initiative in advancing nervous system tumor classification**

David N. Louis<sup>1</sup>, Ken Aldape<sup>2</sup>, Daniel J. Brat<sup>3</sup>, David Capper<sup>4,5</sup>, David W. Ellison<sup>6</sup>, Cynthia Hawkins<sup>7</sup>, Werner Paulus<sup>8</sup>, Arie Perry<sup>9</sup>, Guido Reifenberger<sup>10</sup>, Dominique Figarella-Branger<sup>11</sup>, Pieter Wesseling<sup>12,13</sup>, Tracy T. Batchelor<sup>14\*</sup>, J. Gregory Cairncross<sup>15\*</sup>, Stefan M. Pfister<sup>16\*</sup>, Stefan Rutkowski<sup>17\*</sup>, Michael Weller<sup>18\*</sup>, Wolfgang Wick<sup>19\*</sup>, Andreas von Deimling<sup>4,5</sup>

<sup>1</sup> Department of Pathology, Massachusetts General Hospital, Harvard Medical School, Boston, MA.

<sup>2</sup> Department of Pathology, Princess Margaret Hospital, Toronto, Canada.

<sup>3</sup> Department of Pathology and Laboratory Medicine, Emory University School of Medicine, Atlanta, GA.

<sup>4</sup> Department of Neuropathology, Institute of Pathology, Ruprecht-Karls-University, Heidelberg, Germany.

<sup>5</sup> Clinical Cooperation Unit Neuropathology, German Cancer Research Center (DKFZ), and German Cancer Consortium (DKTK), Heidelberg, Germany.

<sup>6</sup> Department of Pathology, St. Jude Children's Research Hospital, Memphis, TN.

<sup>7</sup> Department of Paediatric Laboratory Medicine, The Hospital for Sick Children, University of Toronto, Toronto, Canada.

<sup>8</sup> Institute of Neuropathology, University Hospital Munster, Munster, Germany.

<sup>9</sup> Department of Pathology, University of California San Francisco, San Francisco, CA.

<sup>10</sup> Department of Neuropathology, Heinrich Heine University, Duesseldorf, and German Cancer Consortium (DKTK) partner site, Essen/Duesseldorf, Germany.

<sup>11</sup> Department of Pathology and Neuropathology, La Timone Hospital, Aix Marseille University, Marseille, France.

<sup>12</sup> Department of Pathology, VU University Medical Center, Amsterdam, the Netherlands.

<sup>13</sup> Department of Pathology, Princess Máxima Center for Pediatric Oncology and University Medical Center Utrecht, Utrecht, the Netherlands.

<sup>14</sup> Department of Neurology, Massachusetts General Hospital, Harvard Medical School, Boston, MA.

<sup>15</sup> Department of Clinical Neurosciences, University of Calgary, Calgary, Canada.

<sup>16</sup> Division of Pediatric Neurooncology, German Cancer Research Center (DKFZ) Heidelberg, Heidelberg, Germany; German Cancer Consortium (DKTK) Core Center Heidelberg, Heidelberg, Germany; Department of Pediatric Oncology, Hematology, & Immunology, Heidelberg University Hospital, Heidelberg, Germany.

<sup>17</sup> Department of Pediatric Haematology and Oncology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

<sup>18</sup> Department of Neurology, University Hospital Zürich, Zürich, Switzerland.

<sup>19</sup> Neurology Clinic and National Center for Tumor Diseases (NCT), University Hospital Heidelberg, Heidelberg, Germany; Clinical Cooperation Unit Neurooncology, German Cancer Research Center (DKFZ), Heidelberg, Germany; German Cancer Consortium (DKTK) Core Center Heidelberg, Heidelberg, Germany.

### **Corresponding author:**

David N. Louis, MD, Pathology Service,  
Massachusetts General Hospital, WRN225,  
55 Fruit Street, Boston, MA 02114 (E-mail:  
[dlouis@mgh.harvard.edu](mailto:dlouis@mgh.harvard.edu))

Received 8 November 2016

Accepted 9 November 2016

Published Online Article Accepted

14 November 2016

\*cIMPACT-NOW Clinical Advisory Panel

Conflict of Interest: The authors have no conflicts of interest with the materials presented in the manuscript.

doi:10.1111/bpa.12457

The 2016 World Health Organization Classification of Tumors of the Central Nervous System (2016 CNS WHO) is a major shift in the way neuropathologists analyze and diagnose brain tumors as it incorporates molecular and histological information together to define many entities (1). While the 2016 CNS WHO thereby facilitates more precise diagnosis of well-understood entities and clearer designation of less-understood entities, it also presents a number of practical challenges for neuropathologists, requiring substantial shifts in their day-to-day practices (2). Nonetheless, neuropathologists will learn the system readily over time, and will adapt as needed to the new requirements.

For a variety of reasons, formal WHO classification updates such as the 2016 CNS WHO only occur every decade or so, meaning that such large diagnostic shifts will occur relatively infrequently. However, there has clearly been an acceleration in our understanding of the molecular characteristics of human nervous system tumors and in our appreciation of the clinicopathological correlates of these molecular changes over the past 10 to 15 years. This increased pace of change in the field creates a need to evaluate classification progress faster than is possible through standard WHO updates. For example, if major findings come along in the classification of a particular tumor type, does the diagnostic neuropathology community need to wait for the next WHO classification for guidelines, or is there a mechanism to provide a different type of update on an interim basis?

In response to this question, the International Society of Neuropathology (ISN) has sponsored an initiative to evaluate and recommend proposed changes to future CNS tumor classifications: cIMPACT-NOW, the Consortium to Inform Molecular and Practical Approaches to CNS Tumor Taxonomy. The goal of cIMPACT-NOW is to facilitate input and consensus review of novel diagnostically relevant data and determine how such information can be practically incorporated into future CNS tumor classifications. While it is understood that the major impact on international nervous system tumor classification comes about through the WHO classification update process, it is anticipated that this additional process will “see impact” in selected tumor types and in time

periods between the WHO classification updates. The cIMPACT-NOW updates are not intended to supplant the existing WHO classification, but to provide possible consensus recommendations for practicing diagnosticians and potential information for future WHO classification updates. This initiative is described in some more detail elsewhere (3).

Given the central role played by neuropathologists in brain tumor diagnosis and the substantial effect that new classifications play in the daily activities of neuropathologists, additional new interim recommendations may require additional explanation. It is expected that the cIMPACT-NOW group will publish its consensus recommendations promptly, and that the publications in *Brain Pathology* (the official journal of the ISN) will emphasize practical neuropathological aspects of the proposals, anticipating questions that diagnostic pathologists may have in implementing them. We are excited that the ISN is sponsoring cIMPACT-NOW, as it did the “ISN-Haarlem” guidelines (4), since these initiatives promise to move the field of neuropathology forward in a timely manner.

## REFERENCES

1. Louis DN, Ohgaki H, Wiestler OD, Cavenee WK World Health Organization Histological Classification of Tumours of the Central Nervous System. 4th edition update ed. International Agency for Research on Cancer: Lyon, France; 2016.
2. Louis DN, Perry A, Reifenberger G, von Deimling A, Figarella-Branger D, Cavenee WK *et al* (2016) The 2016 World Health Organization Classification of Tumors of the Central Nervous System: a summary. *Acta Neuropathol* **131**:803–820.
3. Louis DN, Aldape K, Brat D, Capper D, Ellison DW, Hawkins C *et al* (2017) Announcing cIMPACT-NOW: the consortium to inform molecular and practical approaches to CNS tumor taxonomy. *Acta Neuropathol*.
4. Louis DN, Perry A, Burger P, Ellison DW, Reifenberger G, von Deimling A *et al* (2014) International Society Of Neuropathology–Haarlem consensus guidelines for nervous system tumor classification and grading. *Brain Pathol* **24**:429–435.