

# Gravitational Wave International Committee (WG.11)

## report to IUPAP

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(prepared by Stan Whitcomb, *Caltech* [Secretary] and Eugenio Coccia, *Gran Sasso Science Institute and U. of Rome "Tor Vergata"* [Chair])

The Gravitational Wave International Committee (GWIC) was formed in 1997 to facilitate international collaboration and cooperation in the construction, operation and use of the major gravitational wave detection facilities world-wide. From 1999 until 2011, GWIC was recognized as a subpanel of PaNAGIC (IUPAP WG.4). In 2011, GWIC was accepted by IUPAP as a separate Working Group (WG.11).

GWIC meets annually adjacent to an appropriate conference. In June 2014, GWIC met in Banff, Canada, in conjunction with the International Pulsar Timing Array annual meeting. This was the first time that GWIC met in conjunction with a pulsar timing meeting, and helps cement the participation of the pulsar timing community in GWIC. Other recent meetings have been held in Warsaw (2013), Rome (2012), Cardiff (2011), Hannover (2010), Pasadena (2009), and New York City (2009). Other business during the year is conducted via email or other electronic communication.

GWIC maintains a website at <https://gwic.ligo.org/> which contains an up-to-date listing of members, its by-laws, announcements of its activities, and links to other items of interest to the gravitational wave community.

### **GWIC Membership**

The membership of GWIC represents all of the world's active gravitational wave projects, as well as other relevant communities, covering gravitational wave frequencies from nanohertz to kilohertz. Each project has either one or two members on GWIC depending on size. GWIC also includes representatives from ISGRG (IUPAP AC2) and from the astrophysics/theoretical relativity community. Two members of GWIC (Eugenio Coccia and Sheila Rowan) are also members of ApPIC (WG.10), ensuring close communications.

Each member project in GWIC determines its representatives on GWIC. In this year, only one member project appointed a new representative: Virgo (Fulvio Ricci).

### **GWIC Activities in 2012-2013**

GWIC convenes the biennial Edoardo Amaldi Conference on Gravitational Waves, sponsored by IUPAP as a "class B" Conference. The Amaldi meeting is considered by many in the gravitational wave community to be their most important international

gathering. The members of GWIC serve as the Scientific Organizing Committee for the Amaldi meetings. The 2015 Amaldi meeting will be held at Gwangju (Korea) in June 2015. This is the first time that the Amaldi meeting will be held in Korea, and only the second time in Asia. GWIC heard a report on the planning for the conference at its meeting in Banff.

Since 2006, GWIC has awarded an annual international prize for an outstanding Ph. D. thesis based on research in gravitational waves. At its meeting in Warsaw, agreed to coordinate its prize with the Stefano Braccini Thesis Prize. In 2011, an informal group (the Friends of Stefano Braccini) created a separate thesis prize, to honor Stefano, a talented young physicist who had worked with the Virgo project. It was decided that GWIC would manage the solicitation of nominations and selection of the two winners. Furthermore, it was proposed that the two prizes be distinguished by emphasizing the impact to the field for the GWIC Thesis prize and by emphasizing creativity and innovation for the Stefano Braccini Prize. This new arrangement was used for the 2013 prizes. There were 17 theses nominated this year, from six different countries.

The 2013 GWIC Thesis Prize was awarded to Sheon Chua from the Australian National University, and the 2013 Stefano Braccini Prize was awarded to Tjonnje Li from Vrije University Amsterdam. Springer agreed to extend its agreement with GWIC to accept nominations from GWIC of both prize winners for publication in the Springer Thesis Series. Both Prize winners were accepted by Springer for publication this year.

At its meeting in Banff, GWIC heard that the International Astronomical Union (the analogous international body to IUPAP in the area of astronomy and astrophysics) was undergoing a reorganization and had just issued a call for new Commissions. GWIC discussed that some scientists in the community had expressed interest in proposing a new Commission on gravitational wave astrophysics. The conclusion was that this Commission would benefit the gravitational wave community broadly and that GWIC should support this proposal if asked. However it was also decided that the new IAU Commission would have a different mission and should be independent from GWIC. If the Commission proposal is accepted, GWIC decided that it should explore cross-representation with the new Commission, in the same spirit of collaboration and communication as it has with other IUPAP bodies.

Also in conjunction with the Banff meeting, GWIC organized a focused workshop on the question of what level of confidence, both statistical and instrumental, is required for a first direct detection claim. This workshop brought together the two communities that are poised for a possible first detection in the next few years: the ground-based interferometer community and the pulsar timing community. The frank discussion and broad overview of this workshop was widely viewed as extremely valuable.

**Membership of GWIC (as of October 2014)**

*Chair:* Eugenio Coccia

*ACIGA:* Peter Veitch

*AURIGA:* Massimo Cerdonio

*Einstein Telescope:* Michele Punturo

*European Pulsar Timing Array (EPTA):* Michael Kramer

*GEO 600:* Karsten Danzmann, Sheila Rowan

*IndIGO:* Bala Iyer

*KAGRA:* Takaaki Kajita, Yoshio Saito

*LIGO, including the LSC:* Gabriela Gonzalez, David Reitze

*LISA:* Neil Cornish, Bernard Schutz, Robin Stebbins, Stefano Vitale

*NANOGrav:* Frederick Jenet

*NAUTILUS:* Eugenio Coccia

*Parkes Pulsar Timing Array (PPTA):* George Hobbs

*Spherical Acoustic Detectors:* Odylio D. Aguiar

*VIRGO:* Fulvio Ricci, Jean-Yves Vinet

*Theory Community:* Clifford Will

*AC2 Representative:* Beverly Berger

*Executive Secretary:* Stan Whitcomb