

Gravitational Wave International Committee (WG.11)

report to IUPAP

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prepared by David Shoemaker [*MIT*, Executive Secretary],
Stan Whitcomb [*Caltech*, co-Secretary], and Sheila Rowan, [*U. of Glasgow*, 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 July 2016, GWIC met in New York City, in conjunction with the twenty-first International Conference on General Relativity and Gravitation (GR21). Other recent meetings have been held in Gwangju (2015), Banff (2014), Warsaw (2013), Rome (2012), Cardiff (2011), Hannover (2010), and Pasadena (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), International Astronomical Union (IAU) Commission on Gravitational Wave Astrophysics, and from the astrophysics/theoretical relativity community, to help facilitate communication with those bodies. Two members of GWIC (Eugenio Coccia and Sheila Rowan) are also members of ApPIC (WG.10), ensuring close communications.

The GWIC Chair is elected by its membership at its annual meeting in odd years. In 2015, GWIC chose Sheila Rowan as its Chair, serving until 2017. The GWIC Chair appoints the Executive Secretary. This year, after serving for nine years, Stan Whitcomb asked to be replaced. Sheila selected David Shoemaker (MIT) as the new Executive Secretary. Stan agreed to stay on as co-Secretary for a one year transition period.

Each member project in GWIC determines its representatives on GWIC. In this year, the US LISA Collaboration appointed a new representative: James (Ira) Thorpe, replacing Robin Stebbins.

GWIC Activities in 2014-2015

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 2017 Amaldi meeting will be held in Pasadena (USA) from 9-14 July 2017. GWIC heard a report on planning for the meeting. Preparations are proceeding smoothly, and GWIC took an action item to appoint a subcommittee to begin planning the program.

A major decision at the 2016 GWIC meeting concerned the 2019 Amaldi meeting. Every six years, the biennial Amaldi meetings and the triennial ISGRG-sponsored International Conference on General Relativity and Gravitation take place in the same year. Because these two meetings attract many of the same scientists, joint meetings were held in 2007 (Sydney) and 2013 (Warsaw). ISGRG proposed a continuation of this practice in 2019. GWIC discussed this proposal and agreed to this arrangement. Two groups presented proposals to host a joint GR22/Amaldi12 meeting, in Valencia (Spain), and in Budapest (Hungary). All proposals were judged to be very good. GWIC communicated its willingness to accept either proposal to the ISGRG Committee, which made the final selection of Valencia.

Since 2006, GWIC has awarded an annual international prize for an outstanding Ph.D. thesis based on research in gravitational waves. Since 2013, GWIC has coordinated its prize with the Stefano Braccini Thesis Prize, (sponsored by the Friends of Stefano Braccini). GWIC manages the solicitation of nominations and selection of the two winners. The two prizes are distinguished by emphasizing the impact to the field for the GWIC Thesis prize and by emphasizing creativity and innovation for the Stefano Braccini Prize.

There were 20 theses nominated this year, from four different countries. The 2015 GWIC Thesis Prize was awarded to Denis Martynov from Caltech, and the 2015 Stefano Braccini Prize was awarded to Vikram Ravi from the University of Melbourne. Both theses were nominated for publication in the Springer Thesis Series, per GWIC's agreement with Springer.

With Advanced LIGO's recent detection of gravitational waves from two binary black hole mergers and with the impending initial operation of Advanced Virgo and KAGRA and the construction approval of LIGO-India, substantial attention in the ground-based interferometer community has been turned to the longer term future, with initial discussions concerning possible future facilities. At its 2015 meeting, there was

considerable sentiment within GWIC that such discussions should include international collaboration and planning. GWIC decided to charge a small group of members to discuss forming a GWIC subcommittee focused on this area. This group reported back that it recommended that GWIC form such a subcommittee and presented a draft charge for this subcommittee. GWIC discussed the benefits and the possible pitfalls that might arise and gave guidance to the Chair on how to minimize conflicts. This subcommittee is being formed and it will both interact with the ground-based gravitational wave community and the government agencies that fund this work.

Membership of GWIC (as of October 2016)

Chair: Sheila Rowan

ACIGA: Bram Slagmolen

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, Ira Thorpe, Stefano Vitale

NANOGrav: Xavier Siemens

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

IAU Commission D1 Representative: Neil Gehrels

Executive Secretary: David Shoemaker, *co-Secretary:* Stan Whitcomb