Gravitational Wave International Committee (WG.11) report to IUPAP

2 October 2015

(prepared by Stan Whitcomb, *Caltech* [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 June 2015, GWIC met in Gwangju, Korea, in conjunction with the eleventh Edoardo Amaldi Conference on Gravitational Waves. Other recent meetings have been held in Banff(2014), 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.

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, and Sheila continued Stan Whitcomb in this position for one year.

Each member project in GWIC determines its representatives on GWIC. In this year, two member projects appointed new representatives: ACIGA (Bram Slagmolen) and NANOGrav (Xavier Siemens). In addition, GWIC invited the President of the International Astronomical Union (IAU) Commission on Gravitational Wave Astrophysics (Neil Gehrels) to join (see below).

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 2015 Amaldi meeting was held at Gwangju (Korea) in June 2015. This was the first time that the Amaldi meeting was held in Korea, and only the second time in Asia. The meeting was a very successful one, in spite of some concerns about MERS in the time just before the meeting.

A major decision at the 2015 GWIC meeting was the selection of a venue and local organizing group for the 2017 Amaldi meeting. Four groups presented proposals to host the 2015 Amaldi meeting, in CERN (Switzerland), Budapest (Hungary), Gwangju (Korea), and Minneapolis (USA), and Pasadena (USA. All proposals were judged to be excellent. Pasadena was selected, hosted by a local organizing committee led by the LIGO Laboratory.

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 15 theses nominated this year, from four different countries.

The 2014 GWIC Thesis Prize was awarded to Leo Singer from Caltech, and the 2014 Stefano Braccini Prize was awarded to Yan Wang from the University of Hannover. Springer agreed to extend its agreement with GWIC to accept nominations from GWIC of both prize winners for publication in the Springer Thesis Series.

At its 2014 meeting in Banff, GWIC heard about plans for a reorganization of the IAU (the analogous international body to IUPAP in the area of astronomy and astrophysics), with a call for new Commissions (similar in some ways to Working Groups in IUPAP). GWIC concluded that a Commission in gravitational wave astrophysics would benefit the gravitational wave community broadly and that GWIC should encourage appropriate members of the gravitational wave community if they decided to prepare a proposal.

At this meeting, GWIC learned that such a proposal had been submitted and accepted (http://www.iau.org/science/scientific_bodies/commissions/D1/). The new Commission will focus on the astronomical aspects of gravitational wave observations, and thus will have a complementary but related role in the international scientific community. Indeed, a number of members of GWIC are also members of the IAU and have already joined this new Commission. However, to ensure coordination between the two bodies, GWIC

decided to invite the President of the new Commission (Neil Gehrels) to join GWIC, and he has accepted.

The impending initial operation of Advanced LIGO and Advanced Virgo has turned substantial attention in the ground-based interferometer community to the longer term future, with initial discussions concerning possible future facilities. There is considerable sentiment within GWIC that such discussions should include international collaboration and planning. GWIC decided to charge a small group of members to discuss how to aid this effort, including considerations of whether a GWIC subcommittee focused on this area should be formed. This group considering this will be charged to bring a recommendation on formation of a subcommittee back to GWIC at our next meeting.

Membership of GWIC (as of October 2015)

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, Robin Stebbins, 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: Stan Whitcomb