

Executive Officers

<i>Chair</i>	<i>Chair-Elect</i>	<i>Vice-Chair</i>	<i>Past-Chair</i>
Ed Kinney Edward.Kinney@colorado.edu	Craig Roberts cdroberts@anl.gov	Curtis Meyer cmeyer@cmu.edu	Ted Barnes tbarnes@utk.edu
<i>Secretary/Treasurer</i>	<i>Members at Large</i>		
Wally Melnitchouk wmelnitc@jlab.org	Mike Leitch leitch@lanl.gov	Dave Tedeschi tedeschi@sc.edu	

NB. EMail addressed to ghpexec@anl.gov will reach all members of the Executive.

Elections

Elections were held in November, 2005, for the post of Vice-Chair in the GHP. Curtis Meyer was elected unopposed to the position, and we welcome him to his new role.

Members also voted to approve a change in the nature of the position of our Members-at-Large. Now, each Member-at-Large will serve for two years. The terms will be staggered, with one new Member-at-Large elected each year to replace the one who steps down. In November this year, Mike Leitch will stand down, while Dave Tedeschi will continue for a third year so that we can complete the transition to the new scheme.

This is an ideal time to thank *Eric Swanson*, who has played such an important role in getting the GHP up and running. We hope and believe that Eric will continue to contribute!

Just to be clear and keep everyone aware of the timetable, in November this year the GHP will hold elections for **three** posts in the Executive Committee:

Vice-Chair, Secretary-Treasurer and one Members-at-Large

The three-person Nominating Committee will be formed toward the end of the (northern) summer. The Chairman will be Ted Barnes, the Past Chair of the GHP. Early in the autumn, the GHP's membership will be urged to suggest people whom they would like to see filling the open positions in the new year. The nomination of candidates will close on Fri., 27 October and an electronic ballot will subsequently be held over a two week period: 6–17 November.

Membership

At the beginning of 2005, the GHP had 308 members. As of 6 Dec. the number was 337. This is modest (9%) but measurable growth. The GHP is no longer the smallest topical group. Continued growth is nevertheless something for which to strive.

The DNP now has a total of 2452 members (up 1.7% in the last year) and DPF has 3368 (up 2.0%). However, only 204 members of DNP are members of GHP, and only 213 members of DPF! It is therefore very likely that there are many Hadron Physics researchers who are not involved with GHP.

Hence, if you are reading this newsletter but are not a member of GHP, *please join*. Current

APS members can add units online through the APS secure server:

<http://www.aps.org/memb/unitapp.cfm>.

On the other hand, if you are already a member of GHP, please discuss the merits of our Topical Group with your colleagues and encourage them to join. As noted above, we have had modest success with this in the past year. A 10% expansion in 2006 would be good.

Membership in a strong GHP brings many benefits. A vital GHP

- establishes and raises the profile of Hadron Physics in the broader physics community, e.g., by nominating members
 - to APS governance committees,
 - to APS prize and award selection committees,
 - for election to Fellowship in the APS
- has a greater role in planning the program for major APS meetings;
- and provides a vehicle for community action on topics that affect the way research is conducted and funded.

Membership is only \$7. Of this, GHP receives \$5 from the APS. (The remainder stays with the APS and covers the many services they provide.) With this support we can be an active force for Hadron Physics. The money can be used, for example, to assist with: the organization of meetings; the preparation of publications that support and promote the GHP's activities; and the participation in those fora that affect and decide the direction of basic research.

Fellowship

We take this opportunity to congratulate *Charles Hyde-Wright*, Old Dominion University, who was elected in 2005 to Fellowship in the APS under the auspices of the GHP “for the development of Virtual Compton Scattering as a probe of the structure of the Nucleon.”

We wish to remind the GHP that each year the APS allocates a number of Fellowship Nominations to a Topical Group. That number is based primarily on membership. A strong GHP can nominate more of our members for Fellowship. This year we are allocated ONE Regular nomination and ONE Alternate, for a total of TWO nominations.

The Executive urges members of GHP to nominate colleagues who have made advances in knowledge through original research and publication or made significant and innovative contributions in the application of physics to science and technology. They may also have made significant contributions to the teaching of physics or service and participation in the activities of the Society.

The instructions for nomination may be found at <http://www.aps.org/fellowship/fellinfo.cfm>

To summarize, one must

- Ensure nominee is a member of the Society in good standing.
- Obtain signatures of two sponsors who are members of the Society in good standing.
- Submit a complete original nomination packet (signed Nomination Form and Supporting Letters . . . these documents are available for download from the web page) and one photocopy packet prior to **5th May 2005** (GHP's deadline) to:

- Executive Officer
ATTN: Fellowship Program
The American Physical Society
One Physics Ellipse
College Park, MD 20740-3844

Supporting letters should be included with nomination form to ensure attachment to the correct nomination package. Individuals providing letters of support do not have to be members of the APS, however, it is preferable in practice that sponsors be APS Fellows.

The APS will subsequently forward the Nominations to the GHP Fellowship Committee. This year the committee is:

2005 GHP Fellowship Committee

Mike Leitch leitch@lanl.gov	Curtis Meyer cmeyer@cmu.edu	Adam Szczepaniak aszczepa@indiana.edu
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Curtis Meyer is Chair. Do not hesitate to contact him or his colleagues on the committee if you have questions.

The Executive urges members of GHP to react quickly to this call for nominations.

GHP Session at the April Meeting in Dallas

A topical group is invited to participate in planning the program of major APS meetings. That number can grow if we increase our membership and visibility.

This year, GHP is sponsoring one invited session at the April meeting in Dallas: April 22-25, 2006. Our session begins at 13:30 on Saturday April 22nd and the speakers are

Eric Braaten (Ohio State)	The New Exotic Heavy Mesons
Berndt Müller (Duke)	Jet Interactions with Dense Matter at RHIC
Mark Pitt (Virginia Tech)	Strange Quarks in the Nucleon

The session will be chaired by P. C. Tandy, Kent State University.

The official Bulletin/Program will be available in February at
<http://www.aps.org/meet/APR06/baps/>

Forthcoming Meetings

The GHP web site <http://www.aps.org/units/ghp/> has a *Conferences* link – <http://www.aps.org/units/ghp/meetings.cfm>. This lists meetings that are likely to be of interest to GHP’s membership. The Executive welcomes suggestions for postings.

The following meetings are currently listed for the coming year:

May ...

- [Light Cone 2006](#), Light-Cone QCD and Nonperturbative Hadron Physics, Minneapolis Campus of the University of Minnesota
Monday, May 15 to Friday, May 19, 2006

- [5th International Conference on Perspectives in Hadronic Physics](#)
ICTP, Trieste, Italy, May 22-26, 2006
- [CIPANP06](#), *Conference on the Intersections of Particle and Nuclear Physics*
Westin Rio Mar Beach Resort and Country Club
Rio Grande, Puerto Rico, May 30 - June 3, 2006

June ...

- [Charm2006](#), *International Workshop on Tau-Charm Physics*
Beijing, China, 5 - 7 June, 2006
- [QNP06](#), *IVth International Conference on Quarks and Nuclear Physics*
Madrid, 5 - 10 June 2006
- [9th International Workshop on Meson Production, Properties and Interaction](#)
Krakow, Poland, 9th - 13th June 2006
- [ELBA IX](#), *Electron-Nucleus Scattering IX*
Elba International Physics Center, Marciana Marina, Elba, Italy
June 19 - 23, 2006
- [4th International Workshop on Heavy Quarkonium](#)
Organized by the Quarkonium Working Group
BNL, USA, 27th - 30th June 2006

July ...

- 3rd Topical Workshop on Lattice Hadron Physics (LHP06)
Jefferson Lab, Virginia, July 31 - August 3, 2006

August ...

- [18th International IUPAP Conference on Few-Body Problems in Physics](#)
Santos, São Paulo, Brazil 21-26 August, 2006

September ...

- [Confinement 7](#): Quark Confinement and the Hadron Spectrum VII
Ponta Delgada, Azores, Portugal, 2-7 September 2006

October ...

- [SPIN 2006](#), *17th International Spin Physics Symposium*
Kyoto, Japan, October 2 - 7, 2006
- *APS Division of Nuclear Physics Fall Meeting*
Nashville, Tennessee, 24 - 28 October, 2006
- *Meeting of the APS Division of Particles and Fields*
Honolulu, Hawaii, 30 October - 3 November, 2006

Meeting of GHP in 2006

GHP06 will take place in Nashville in the period Sun., 22 Oct. till Tues., 24/Oct. This immediately precedes the 2006 *Fall Meeting* of the APS Division of Nuclear Physics, which is also to be held in Nashville.

Planning is in progress. The Organizing Committee is

Kees de Jager	Craig Roberts	Eric Swanson
kees@jlab.org	cdroberts@anl.gov	swansone+@pitt.edu

with local support from

David Ernst	Paul Sheldon
david.j.ernst@vanderbilt.edu	paul.sheldon@vanderbilt.edu

The GHP membership is *encouraged* to contact Kees, Craig and/or Eric with program suggestions. The format will be modelled on that of [GHP04](#).

FY07 Budget

After very severe cuts across the board last year, we are all anxious to learn what FY07 has in store. February 7th is the day when speculation will end and the next stage in efforts to improve our lot will begin in earnest. The APS will be active in these such efforts, and the GHP Executive Committee proposes to assist as possible, practical and necessary.

APS Convocation and Congressional Visits Day

This year the GHP will have three representatives at the Convocation and the Congressional Visits Day: Curtis Meyer, Wally Melnitchouk and Dave Tedeschi. The Congressional visits will take place on Fri., 17/Feb. and the Unit Convocation on Sat., 18/Feb.

The Convocation is an orientation to the APS and its staff, a primer on unit operations and interaction with the APS, and an excellent opportunity to network with other unit officers. It is plainly useful to learn how to deal with the APS.

The Congressional Visits Day is being organized by the APS Office of Public Affairs and has been a very worthwhile activity in the past. Last year Mike Leitch and Craig Roberts participated, with Mike visiting offices of representatives from New Mexico and Craig, some of those from Illinois. This year, Curtis, Wally and Dave will be similarly active.

GSI Darmstadt Hadron Physics Fora

(Communicated by Klaus Peters, GSI Darmstadt, Division Head for Hadron Physics)

[GSI Darmstadt](http://forum.gsi.de/) hosts a list of web based fora for hadron physics (<http://forum.gsi.de/>). This is intended to be a common place for hadron-physics-related issues in various fields and all people interested are invited to participate in the discussions.

At present we have the following fora:

- [Hadron - General Announcements](#)
- [Hadron - Scalars](#)
- [Hadron - Tensors](#)
- [Hadron - Charmonium](#)
- [Hadron - Bottomonium](#)
- [Hadron - Open Charm](#)
- [Hadron - Open Beauty](#)
- [Hadron - QCD Exotics](#)
- [Hadron - Effective Theories](#)
- [Hadrons in Media](#)

There is no charge or restriction for the usage of the fora. You need only register once online at <http://forum.gsi.de/index.php?t=register> in order to subscribe and enter into the discussions.

If you see a need for fora other than those established initially (naturally, we expect this to be the case) please do not hesitate to contact Klaus Peters k.peters@gsi.de with the suggestion(s).

State of the Laboratories

For this issue the Executive solicited and received input for this section from BES, COSY and the ECT*.

We would be pleased to receive input from GHP membership, in particular from people at labs with hadron physics programs who are willing to prepare input and clear it with their lab's leadership. The following contributions should serve as a template.

Discovery of a new particle $X(1835)$ at BES

(Communicated by Jin Shan, Institute of High Energy Physics, Beijing
EMail: jins@mail.ihep.ac.cn)

Recently, the BES Collaboration reported the discovery of a new sub-atomic particle, named the $X(1835)$. The discovery was made with the Beijing Electron Spectrometer (BES) located at the Beijing Electron Positron Collider (BEPC). This particle was observed in processes where a J/Ψ meson decays to one photon and three lighter mesons; its mass is 1835 MeV, slightly less than twice the proton mass, and its lifetime is about 10^{-23} second. The result was published in the Dec. 31, 2005 edition of Physics Review Letters.

The $X(1835)$ has received considerable attention from the international physics community, not just because it is a new particle, but also because of the possibility that it may be a new *type* of particle, one that has been sought for over 30 years. There are several interpretations for the $X(1835)$. It may be the same particle as found by BES two years ago in J/Ψ decays into a high energy γ -ray plus a proton and an anti-proton, in which case it might be a bound state of a proton and an anti-proton (a six-quark state). On the other hand, some speculate that it may be a glueball or an ordinary meson. With the current data, none of the competing interpretations can either be firmly established or ruled out. To really pin down the nature of the $X(1835)$, more experimental and theoretical efforts are needed. In particular, more experimental data is essential. (The name X reflects the fact that its structure is not yet fully understood.) An in-depth study of the $X(1835)$ will provide a better understanding of its nature, and will likely provide important new insights into the Standard Model.

This work is strongly supported by the Chinese theoretical physics community. During the past two years, experimenters and theorists have held a number of joint seminars and workshops to discuss the BES observations. From these, numerous comments and suggestions

have emerged. The discovery of the $X(1835)$ was a direct result of ideas that were generated in these discussions. An extended international collaboration, a continued strong collaboration between the experimental and theoretical communities, coupled with the greatly enhanced capabilities of the upgraded BES/BEPC facility bodes well for China's future in this important field of research.

The discovery of $X(1835)$ is one of the most important achievements of the BES collaboration, which is composed of physicists from more than 20 institutions from China, the USA and other countries. In recent years, BES has performed very well, leading to about 60 publications. In particular, BES has been prominent in the search for multi-quark states.

Currently, a major upgrade of and BES is underway. When the upgrade is completed in 2007, the BEPC particle production rate will be increased by a factor of 100, and the performance of the BES detector will be much improved. With the upgraded facility, there will be hundreds of times as many $X(1835)$ particles produced and decisive conclusions about its underlying nature should be possible. Moreover, a thorough examination of other processes will provide many opportunities for additional new and interesting discoveries that will enhance our understanding of the basic constituents of nature.

In the period 10-12 Jan., 2006, a new BES Collaboration, with about 100 physicists from China, Germany, Japan, Russia, Sweden and the USA, held its initial meeting in Beijing. The meeting focused on planning how best to exploit the physics potential of the upgraded BES detector.

News from COSY

(Communicated by H. Machner, EMail: h.machner@fz-juelich.de)

The experiments at COSY make use of internal and external proton and deuteron beams, both unpolarized as well as polarized.

η and η' physics was and is one topic at ANKE, COSY-11 and BIG KARL (GEM) to measure cross sections following pp , pd and dd collisions. A measurement of the η meson mass at BIG KARL (GEM) yields $m_\eta = 547.311 \pm 0.028$ (stat.) ± 0.040 (syst.) MeV/ c^2 . The error bars here are so small that the GEM value should dominate the next compilation of the Particle Data Group. They also measured tensor analyzing powers in $dd \rightarrow \eta\alpha$ interactions. The ENSTAR detector at BIG KARL had its first run to search for η -bound nuclei. It is a barrel like detector consisting of three layers of plastic scintillators. While the missing mass of the bound state is measured in recoil free kinematics with BIG KARL, background is reduced via coincident measurement of the decay $N^{0*} \rightarrow p\pi^-$. At ANKE the $\bar{K}K$ decay channels of the $a_0/f_0(980)$ were studied. Measurements of the $pp \rightarrow ppK^+K^-$ reaction have been carried out at COSY-11 (below the ϕ -threshold) and ANKE (above). At ANKE there is excitement about the evidence of a new hyperon with mass 1480 MeV/ c^2 . Furthermore the collaboration studied the K^-d scattering length.

The search for the pentaquark continued at COSY-TOF. A run with tenfold the statistics of the earlier published run was performed. The reaction of interest is $pp \rightarrow \Sigma^+ K^0 p$. Double polarization measurements are being prepared here aiming at the parity determination of the pentaquark.

Few-body physics are another topic at ANKE and BIG KARL. The $\vec{d}p \rightarrow ppn$ break up was studied at ANKE. Of special interest were cases with $E(pp) < 3MeV$. This guarantees that the two protons are in the 1S_0 state. The analyzing powers cannot be explained by calculations employing meson exchange NN forces. At BIG KARL the somewhat similar reaction was studied: $pp \rightarrow \pi pn$. Here also the bound state $pn = d$ was measured. The

resolution was so high (~ 100 keV) and the background so low that a punching of deuteron events into the pn continuum could be avoided. Moreover, this high resolution was sufficient to put very stringent limits on the production of spin-singlet np final states in the $pp \rightarrow \pi^+ \{pn\}_s$ reaction, showing that it was vanishingly small compared to triplet production.

The WASA detector has recently been shipped from Uppsala, Sweden to Jülich. It will be installed into the COSY ring in the next months. Running in and presentation of its physics programme will be discussed in a forthcoming communication.

Hadronic Physics at the ECT*

(Communicated by J.-P. Blaizot, EMail: [blaizot@spht.saclay.cea.fr](mailto:blaizot@spht.saclay cea.fr), and E. S. Swanson, EMail: swansone+@pitt.edu)

The European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT* for short) was created in 1993 to promote the coordination of European research in nuclear physics. It plays a role for hadron physics in Europe which is analogous to that played by the Institute for Nuclear Theory in Seattle for US nuclear physics and for high-energy physics by the Kavli Institute for Theoretical Physics. Although the Centre is designed to enhance European nuclear theory, there is significant North American participation in its many programmes.

The Centre is located at the Villa Tambosi on the outskirts of Trento in the Dolomite Mountains of northern Italy. It is funded by the Autonomous Province of Trentino, various European countries, and receives grants from the European Union.

Scientific activities at the ECT* are focussed on nuclear physics in a broad sense, including Quantum Chromodynamics and hadronic physics, the physics of matter under extreme conditions and ultra-relativistic heavy ion collisions, and low energy nuclear physics and nuclear structure. The Centre achieves its mandate by hosting or organising workshops, collaboration meetings, an annual doctoral training programme, and specialised courses in these research areas.

Typically 15 weeks of workshops are held per year, with most workshops running for one week and some for two weeks. Approximately 600 scientists visit the ECT* each year while participating in the Centre's programmes. The ECT* also offers visiting fellowships for junior and senior researchers and supports about five postdocs. Interactions exist at various levels with the nearby Physics Department of the University of Trento and with the newly established Institute on Bose-Einstein Condensation.

The workshops which ran in 2005 illustrate the interests of the ECT* and its relevance to the GHP:

- Exotic Hadrons
- Partonic Structure of Hadrons
- Two-photon Physics
- Electromagnetic Probes of Hot and Dense Matter
- Charge Symmetry Breaking and other Isospin Violations
- Nuclear Forces and QCD
- Highly excited hadrons

- Resonances in QCD
- Probing Microscopic Structure of the Lightest Nuclei in Electron Scattering at JLab Energies and Beyond
- Weak-coupling Expansion for the Pressure of Hot QCD
- The New Physics of Compact Stars
- Parton Propagation through Strongly Interacting Matter

Of a total of 14 workshops, 9 were co-organised by North American physicists.

The ECT* may clearly be seen as an asset to the worldwide community of hadron physicists, and the leadership of ECT* urges the GHP membership to support and utilise this resource.

More information may be found at the ECT* web site <http://www.ect.it>.