

## **DPF Newsletter December, 2014**

### **DPF 2015 Meeting**

*DPF Executive Committee*

The next meeting of the APS Division of Particles and Fields (DPF2015) will be hosted by the University of Michigan in Ann Arbor, August 4-8 2015. More informations will be accessible through the DPF website in early 2015.

### **Mentoring Award**

*DPF Executive Committee*

The DPF unit of the APS is introducing the *Mentoring Award* to be awarded for the first time in 2015. This APS Unit Award is intended to recognize DPF members who have had an exceptional impact as mentors of particle physics scientists and students. This mentoring could be through teaching or research or science-related activities and is meant to recognize current achievements as well as those spanning a career.

Nominations should be submitted through the AJO website:

<https://academicjobsonline.org/ajo/jobs/4992>

where more details about the award and instructions on how to assemble a nomination packet are also available. Deadline for nominations is January, 15<sup>th</sup> 2015.

### **The Neutrino-Physics Program in the US**

*Mark Messier*

The discovery of neutrino mass nearly 16 years ago sparked a renewed interest in these elusive particles. This past year saw the dawn of neutrino astronomy with conclusive observations of neutrinos of extra-terrestrial origin in the Antarctic ice by the IceCube experiment and more refined measurements of the crucial 1-3 neutrino mixing angle by the T2K and Daya Bay collaborations.

Neutrinos are now central to the Fermilab physics program. After a year-long shutdown for upgrades Fermilab's NuMI facility started delivering neutrino beam to experiments again in September of 2013. The upgrades have allowed the machine to cycle faster and store more protons enabling record intensities during this first year. As commissioning of the new accelerator ring progresses intensities of 400 kW should be achieved this year on the way to the final goal of 700 kW — double the pre-upgrade power — in subsequent years when improvements to the Booster ring are in place.

As the upgraded NuMI beam came online, the MINOS and MINERvA experiments were waiting and ready to go. MINOS (now running under the name MINOS+) has already recorded thousands of events with its far detector 735 km from Fermilab and used those data to set stringent limits on the possibility that the active neutrinos may mix with sterile neutrinos constraining sterile neutrino interpretations of anomalies previously seen by the LSND and MiniBooNE experiments. MINERvA has been releasing results on neutrino-nucleus scattering using data from its previous run at a solid clip with four papers released this year.

The new experiment in the NuMI line, NOvA, has been recording neutrinos in its far detector 810 km distant from Fermilab since November of last year, before the detector was completed. The 14,000 ton detector is now fully operational and first results are expected soon. Over the next few years, NOvA's measurements of muon neutrino disappearance and electron neutrino appearance using neutrinos and antineutrinos will provide unique information on the neutrino mass hierarchy and begin to study CP violation in neutrinos in conjunction with the T2K experiment in Japan which is now running using antineutrinos.

With NOvA now online, preparations are underway for the next major neutrino facilities at Fermilab. Following recommendations from the Particle Physics Project Prioritization Panel, a new international collaboration, whose breath of participation will match the ambitious scope of the experiment, is circulating a letter of intent to build a higher intensity beam, and a larger, more sensitive detector located at an even longer distance. Working towards that long term goal, the MircoBooNE experiment will bring its liquid argon time projection chamber, the technology of choice for the future, online in spring and workshops are scheduled to plan further enhancements to the Fermilab "shortbaseline" neutrino program which will refine knowledge of neutrino interactions and explore possible mixings of active neutrinos with sterile neutrinos.

## **The CTEQ Collaboration News**

*Frank Petriello, Nikos Varelas*

The Coordinated Theoretical-Experimental Project on QCD (CTEQ) is a multi-institutional collaboration devoted to a broad program of research projects and cooperative enterprises in high-energy physics centered on Quantum Chromodynamics (QCD) and its implications in all areas of the Standard Model and beyond. CTEQ provides a forum for theorists and experimentalists investigating issues ranging from low-energy nuclear physics to the highest energy collisions to discuss the implications of and connections between their work. The collaboration is well-known for providing the parton distribution functions that bear its name.

The CTEQ collaboration is excited to announce the winner of the first Wu-Ki Tung Award for Early-Career Research on QCD: Stefan Hoeche. Stefan is receiving this award for contributions to the advancement of parton-shower event generators and the development of novel matching schemes to exploit higher-order QCD calculations. The Wu-Ki Tung award was established to recognize outstanding contributions made by early-career physicists on experimental or theoretical research on Quantum Chromodynamics. It is named in honor of the late Wu-Ki Tung, a well-known QCD theorist and a founding member of the CTEQ collaboration. In order to learn more, and to donate to the Tung Fellowship Award Fund that supports this award, please visit the web site <http://www.cteq.org>. Congratulations to Stefan!

The CTEQ collaboration also is pleased to announce the 2015 CTEQ Summer School on QCD Analysis and Phenomenology, to be held from July 7-17 at the University of Pittsburgh. The goal of the school is to promote the understanding of QCD and its proper use among young physicists. The school consists of lectures and discussion sessions presented by leading researchers in the field. Numerous opportunities for one-on-one interactions with the lecturers exist. Graduate students and junior postdocs interesting in learning more about QCD, either theorists and experimentalists, are encouraged to apply at the site <http://www.cteq.org>.

Finally, the CTEQ collaboration is pleased to announce the DIS2015 workshop on "Deep-Inelastic Scattering (DIS) and Related Subjects" has been brought back to the US after many years and will be held on the SMU Campus in Dallas TX, USA, 27 April -- 1 May, 2015.

The workshop reviews the most recent results from experiments at BNL, CERN, DESY, FNAL, JLab, KEK, etc, and also covers the theoretical advances. The program is organized around seven working groups, and contributions to these sessions are welcome.

For further information, including abstract submission procedures and travel information, see: <http://www.dis2015.org>

## **Executive Committee Election Results**

Congratulations to newly-elected officers of the DPF Executive Committee:

Marcela Carena (Vice-Chair),  
Mirjam Cvetič (Member-at-Large)  
Karsten Heeger (Member-at-Large).

They assume their new positions effective January 1, 2015.