NEWS (period January-April 2021)

  The call has been published at the beginning of March, as expected with deadline on December 1st, 2021. The call is for **Detector 1**, which is within the scope of the EIC project and should be based on the “reference” detector described by the EICUG in the Yellow Report (YR) and included in the EIC Conceptual Design Report (CDR), must satisfy the requirements of the EIC “mission need” statement based on the EIC community White Paper and the NAS 2018 report and it is currently planned to be located at Interaction Point 6 (IP6) on the Relativistic Heavy-Ion Collider, and for **Detector 2**, which could be a complementary detector that may focus on optimizing particular science topics or address science topics beyond those described in the White Paper and the National Academies of Science (NAS) 2018 report and would reside at a different Interaction Point from Detector 1 and is currently not within the EIC project scope.

- **Initiatives and Collaborations for Proposals**
  Three collaborations are being formed, namely:
  - CORE ([https://userweb.jlab.org/~hyde/EIC-CORE/](https://userweb.jlab.org/~hyde/EIC-CORE/)),
  - ECCE ([https://ecce-eic.org](https://ecce-eic.org)) and
  - EIC@IP6 ([https://sites.temple.edu/eicatip6/](https://sites.temple.edu/eicatip6/)).
  More information about the collaborations can be found in the Appendix to this newsletter.
A set of workshops dedicated to the physics case and technological requirements in view of instrumenting a second interaction region at the EIC has started with a kick-off meeting in December 2020 followed by a first workshop in March 2021. More information about the initiative can be found at http://www.eicug.org/web/content/2nd-ir-eic-workshop.

- **Finalization and Publication of the EICUG Yellow Report (YR)**
  An almost final version was available around December 20th, 2020. This version was distributed to the external readers, who sent their feedback by January 6th, 2021. The final version has included their suggestions and comments. The result is a rich and extended document (about 900 pages) signed by 412 authors and published in ArXiv (https://arxiv.org/abs/2103.05419), as well as made available via INSPIRE (https://inspirehep.net/literature/1851258). The Executive Summary is being made available in printed version and the procedure to distribute the printed copies world-wide is ongoing.

- **CD1 review**
  Beginning of the 2021 the EIC project underwent the DOE Office of Project Assessment CD-1 Review (January 26th-29th, 2021) and a DOE Independent Cost Review (February 2nd - 4th 2021) both with extremely positive outcome after intense days of discussions. A key input document is the CDR prepared in the second half of 2020 and available at https://www.bnl.gov/ec/files/EIC_CDR_Final.pdf.

- **EICUG Summer Meeting: August 2-6, 2021**
  We are pleased to announce that the virtual EICUG Summer Meeting will be co-organized by Virginia Union University and the University of California, Riverside, with main local organizers Narbe Kalantarians and Miguel Arratia. The meeting will take place during the week of August 2-6, 2021. Stay tuned for more details about the meeting agenda and video conference details.

The University of California, Riverside (UCR) is a public land-grant research university in Riverside, California. It is one of the 10 campuses of the University of California system. UCR is part of the the California EIC consortium that consists of five University of California and California-State University campuses, and three National Laboratories (Berkeley, Davis, Los Angeles, Riverside, Cal Poly San Luis Obispo, LBNL, LLNL, and LANL).
The Virginia Union University (VUU) was founded in 1865 to give newly emancipated slaves an opportunity for education and advancement. The University is the result of the merger of four institutions: Richmond Theological Seminary, Wayland Seminary, Hartshorn Memorial College, and Storer College. VUU Physics offers an undergraduate degree in Physics, as well as a dual degree in Physics and Engineering in partnerships with Howard University and Virginia Commonwealth University. With 2 full time faculty, 3 part-time teaching faculty, and 20 majors, VUU is proud of its growing physics program.

- **Conference and Talks Committee**
  The Conference and Talks Committee coordinates EIC-related seminar, colloquia, workshop and conference activities and selects appropriate speakers from the members of the EICUG. In September 2020, the Committee welcomed three new members, Svetlana Barkanova (Memorial University of Newfoundland, Canada), Michela Chiosso (chair, INFN Torino, Italy) and Alexey Prokudin (vice-chair, PSU Berks, USA). They join continuing members Dmitry Romanov (JLAB, USA) and Sevil Salur (Rutgers University, USA). We offer our sincere thanks to Barbara Pasquini (Pavia U and INFN Pavia, Italy), Carlos Munoz Camacho (Clermont-Ferrand U, France), and Ralf Seidl (Chair, Nishina Ctr., RIKEN, Japan) who served on the EIC Conference and Talks Committee from 2018 to 2020. The Committee is dedicated to principles of equity, inclusion and diversity, and makes a special effort to choose speakers from a wide range of regions, to offer more opportunities to younger researchers, and to promote women and other minorities. Please contact "eicug-talks@eicug.org" in order to suggest conference presenters, especially speakers from the unrepresented groups, and to let the conference and talks committee members know about EIC-relevant conferences or other talk opportunities. A list of past and upcoming conferences can be found on the EICUG web page: [http://www.eicug.org/web/events/upcoming](http://www.eicug.org/web/events/upcoming).

- **Election and Nominating Committee**
  The next EICUG election will be held this summer. The EIC election committee will soon request nominations for the following three positions: Steering Committee Chair, Steering Committee Vice-Chair,
and EICUG European Representative. For the slate of candidates for these important positions, the committee will consider, as in past occasions, a balance by geography, gender, and expertise.

- **Software Working Group**
  The Software Working Group (SWG) has participated in the call for Expressions of Interest (EoI) and is carrying its EoI for Software forward as a living document that is involving into a work plan for the SWG, setting priorities for the next years and goals for the next decade. As part of the EoI, the SWG is launching a community-wide effort on next-generation simulations. Project eAST (eA simulation toolkit) will be led by Makoto Asai of SLAC, Geant4 project leader and deep technical expert for more than 20 years, and will build on the work done in existing detector simulations for the EIC. To ease leveraging new and rapidly evolving computing technologies, Project eAST will implement a common and integrated approach for fast and full detector simulations in Geant4 with a plug and play modular approach. An overview of the project and a proposal with comments by the community are available. In addition the SWG is supporting the simulation efforts for the collaboration proposals for detectors at the EIC. For more information about the SWG, please see [https://eic.github.io](https://eic.github.io), or the latest issue of the SWG Newsletter at [https://eic.github.io/2021/05/07/software-news.html](https://eic.github.io/2021/05/07/software-news.html).

**WELCOME TO NEW INSTITUTIONS**

We welcome the following new institutions in the EIC User Group:

- Pacific Northwest National Laboratory (US) – February 2021
- Creighton University (US) – March 2021
- Yonsei University (Republic of Korea) – April 2021
- Amity University Punjab, Mohali (India) – April 2021

**CALL FOR CONTRIBUTIONS**
If you have news to be included in the next newsletter, please submit via an e-mail to Silvia and Wouter at most 100 words by Wednesday May 26. We cannot guarantee that we can include everything, but we will consider every submission.

PAST NEWSLETTERS

Past newsletters can be accessed on the EIC User Group website, at http://www.eicug.org/web/documents/public.

APPENDIX – Collaborations for proposals

CORE:

COuteract detectoR for the Eic (CORE)

For more information, or to join us, please send a message to:

chyde@odu.edu or turonski@jlab.org

CORE is a Detector-2 proposal, based on the following organizing principles:

- A (nearly) hermetic general-purpose detector that fulfills the EIC physics requirements
- A small size, in particular of the inner systems, is cost-effective and allows:
  1. An overall reduction in cost without performance loss
  2. Improved performance in critical areas without large additional cost
- Risk is minimized by utilizing subsystems from the Generic EIC R&D program
Specific choices driving the overall design:
- Small size enabled by all-Si central tracker (eRD25 design)
- Solenoid 2.5 m long and 0.9 m inner radius.
  - Baseline is 2 Tesla;
  - Compact size enables consideration of fields up to 4 Tesla.
- Radially compact high-performance barrel DIRC for $e/\pi/K/p$ PID (eRD14).
- Dual-radiator RICH (outward-reflecting mirrors) in the ion endcap (eRD14).
- Extended PWO$_4$ EMcal coverage (up to $2\pi$ solid angle, $\eta < 0$).
- High performance HCal for $1 < \eta < 4$ coupled with $K_L$, muon tagging low resolution HCal for $-4 < \eta < 1$.
- Integrated with a 2$^{nd}$ Interaction Region design including a secondary high-dispersion focus (x-y) in the downstream ion-line.

Details of CORE at [https://indico.bnl.gov/event/11053/](https://indico.bnl.gov/event/11053/)

Web Page: [https://userweb.jlab.org/~hyde/EIC-CORE/](https://userweb.jlab.org/~hyde/EIC-CORE/)

**ECCE:**

ECCE Steering Committee:

Or Hen ([hen@mit.edu](mailto:hen@mit.edu))
Tanja Horn ([hornt@cua.edu](mailto:hornt@cua.edu))
John Lajoie ([lajoie@iastate.edu](mailto:lajoie@iastate.edu))
The EIC Comprehensive Chromodynamics Experiment (ECCE) consortium comprises 51 institutions assembled around the idea of developing an EIC detector envisioned to offer full energy coverage and an optimized far forward detection region. The consortium includes institutions with wide-ranging world-class detector expertise, strong involvement with EIC physics, and an understanding of the DOE approach to project management. Our foundational principles were outlined in the first ECCE workshop:

https://indico.cern.ch/event/1005396/

ECCE shares the vision of the Nuclear Physics community that the EIC science mission is best served by two complementary detectors. In pursuit of that goal, ECCE is investigating the complementarity of a detector based on a 1.5T solenoid in both EIC interaction regions.

The ECCE consortium will respond to the EIC call for detector proposals with a plan to address the full range of EIC physics outlined in the NAS study and the Yellow Report, as the EIC project detector. To achieve complementarity we will investigate both IRs with the existing BABAR 1.5T solenoid and will show how ECCE will perform at either RHIC IP6 with its 25 mrad crossing angle or at IP8 with its ~35 mrad crossing angle.

We invite all interested institutions to join our effort!

**EIC@IP6:**

a detector inspired by the Yellow Report detector concept based on a new central detector magnet up to 3T.
The process to start a new collaboration, fully open to synergies with the whole EICUG community, was initiated with the kick-off meeting on 12-13 March, 2021. Presently, 96 Institutions are contributing resulting in a collaboration with market international characterization. In this initial phase, the collaboration is steered by a coordination team of eight colleagues, namely the kick-off meeting organizers:

Silvia Dalla Torre (INFN Trieste, Italy): Silvia.DallaTorre@ts.infn.it
Abhay Deshpande (SBU / CFNS&BNL, USA):
abhay.deshpande@stonybrook.edu
Olga Evdokimov (University of Illinois / Chicago, USA): evdolga@uic.edu
Yulia Furletova (JLab, USA): yulia@jlab.org
Barbara Jacak (UC Berkeley, USA): bvjacak@lbl.gov
Alexander Kiselev (BNL, USA): ayk@bnl.gov
Franck Sabatie (Saclay, France): Franck.Sabatie@cea.fr
Bernd Surrow (Temple University, USA): surrow@temple.edu

In parallel, an active ad hoc committee is preparing a charter. In the meanwhile, a proto-IB (Institutional Board) has been formed with a representative from each Institution. The conveners of ten WGs (Working Groups) have been established based on inputs from the community. Collaboration meetings, already seven of them, take place bi-weekly at a time convenient for Eats Coar, West Cost and Europe and monthly at a time convenient for Eats Coar, West Cost and Asia.

A dedicated web-page has been created: https://sites.temple.edu/eicatip6/. More information can be found there together with e-mail links for contacts and the option to register in the e-mail list that groups all the colleagues interested in the EIC@IP6 initiative.