

# EIC Users Group Introduction and Status



TEMPLE  
UNIVERSITY®

On behalf of the EIC UG Steering Committee





# Welcome



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- Welcome **Everybody** to the **2018 EICUG meeting** on behalf of the EIC Users' group Steering Committee



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- ❑ **Special welcome to representatives of funding agencies, community representatives and BNL / JLab leadership**



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- ❑ **Special welcome** to representatives of funding agencies, community representatives and BNL / JLab leadership
- ❑ Special Thanks to Tanja Horn and her group for hosting the Users' meeting this summer at **The Catholic University of America** in Washington, DC





# Outline



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- **EIC Users' group (EICUG):** News / Size / Demographics / Regional Highlights / Lab News



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- Communication
- Summary



# EIC Users' Group: News

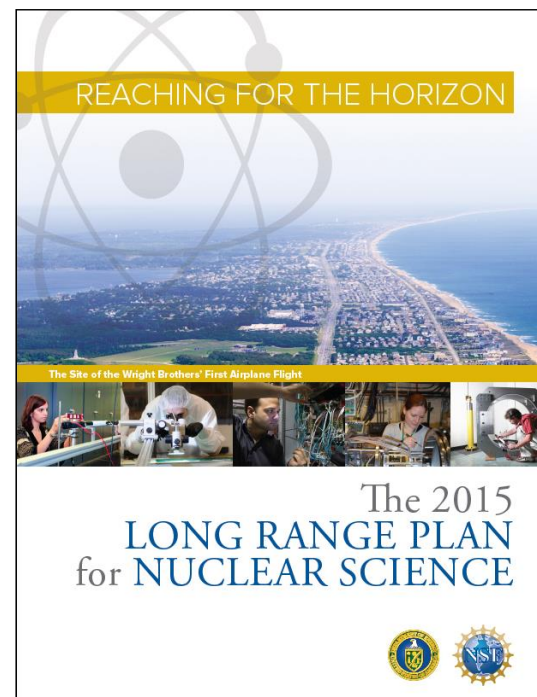
T. Hallman

## □ NSAC Long-Range Plane 2015

### The 2015 Long Range Plan for Nuclear Science

#### Recommendations:

1. Capitalize on investments made to maintain U.S. leadership in nuclear science.
2. Develop and deploy a U.S.-led ton-scale neutrino-less double beta decay experiment.
3. Construct a high-energy high-luminosity polarized electron-ion collider (EIC) as the highest priority for new construction following the completion of FRIB.
4. Increase investment in small-scale and mid-scale projects and initiatives that enable forefront research at universities and laboratories.



The FY 2018 Request supports progress in important aspects of the 2015 LRP Vision



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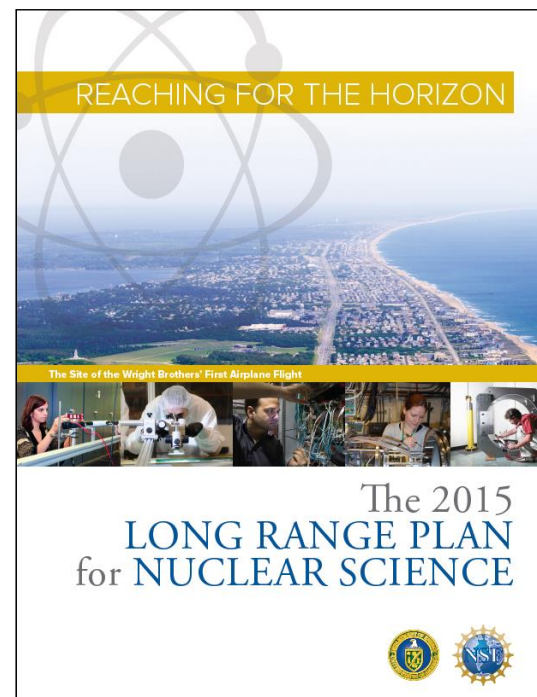
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# EIC Users' Group: News

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## □ NAS review request by DOE: US-based EIC Science Assessment

### Next Formal Step on the EIC Science Case is Continuing

#### **THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE**

Division on Engineering and Physical Science

Board on Physics and Astronomy

#### **U.S.-Based Electron Ion Collider Science Assessment**

#### ***Summary***

The National Academies of Sciences, Engineering, and Medicine (“National Academies”) will form a committee to carry out a thorough, independent assessment of the scientific justification for a U.S. domestic electron ion collider facility. In preparing its report, the committee will address the role that such a facility would play in the future of nuclear science, considering the field broadly, but placing emphasis on its potential scientific impact on quantum chromodynamics. The need for such an accelerator will be addressed in the context of international efforts in this area. Support for the 18-month project in the amount of \$540,000 is requested from the Department of Energy.

“U.S.-Based Electron Ion Collider Science Assessment” is now getting underway. The Chair will be Gordon Baym. The rest of the committee, including a co-chair, will be appointed in the next couple of weeks. The first meeting is being planned for January, 2017



U.S. DEPARTMENT OF

**ENERGY**

Office of  
Science

NSAC Meeting

June 2, 2017

19



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Office of  
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NSAC Meeting

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# EIC Users' Group: News

## □ NAS charge and status

[https://  
www8.nationalacademies.org/  
pa/projectview.aspx?key=49811](https://www8.nationalacademies.org/pa/projectview.aspx?key=49811)

- **Charge:** Focus on **scientific justification** besides impact to other fields in science and society
- **Status:** NAS report released 07/24/2017!

The screenshot shows the website interface for the National Academies of Sciences, Engineering, and Medicine. The left sidebar contains a 'MAIN MENU' with links to HOME, SEARCH, VIEW PROJECTS (expanded), EVENT INFORMATION, CONFLICT OF INTEREST POLICY, COMMITTEE APPOINTMENT PROCESS, and FAQ. Below the menu is contact information for the Public Access Records Office. The main content area is titled 'Project Information' and features the project title 'U.S.-Based Electron Ion Collider Science Assessment'. It includes a 'Project Scope' section, a list of questions the committee will address, and a table with project details.

Project Scope:	Status:
The committee will assess the scientific justification for a U.S. domestic electron ion collider facility, taking into account current international plans and existing domestic facility infrastructure. In preparing its report, the committee will address the role that such a facility could play in the future of nuclear physics, considering the field broadly, but placing emphasis on its potential scientific impact on quantum chromodynamics.	Current
In particular, the committee will address the following questions:	PIN: DEPS-BPA-15-01
<ul style="list-style-type: none"> <li>What is the merit and significance of the science that could be addressed by an electron ion collider facility and what is its importance in the overall context of research in nuclear physics and the physical sciences in general?</li> <li>What are the capabilities of other facilities, existing and planned, domestic and abroad, to address the science opportunities afforded by an electron-ion collider? What unique scientific role could be played by a domestic electron ion collider facility that is complementary to existing and planned facilities at home and elsewhere?</li> <li>What are the benefits to U.S. leadership in nuclear physics if a domestic electron ion collider were constructed?</li> <li>What are the benefits to other fields of science and to society of establishing such a facility in the United States?</li> </ul>	Project Duration (months): 18 month(s)
	RSO: Lancaster, James

Division(s):	Board(s)/Committee(s):	Topic(s):
Division on Engineering and Physical Sciences	Board on Physics & Astronomy DEPS	Math, Chemistry, and Physics



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- NAS Webinar and NAS report release: 07/24/2018

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The screenshot shows the NAS News website. At the top is the NAS logo and navigation menu. The main headline is "FOR IMMEDIATE RELEASE" followed by "A Domestic Electron Ion Collider Would Unlock Scientific Mysteries of Atomic Nuclei, Maintain U.S. Leadership in Accelerator Science, New Report Says". The text discusses the importance of the EIC for understanding the universe and the challenges of building such a facility. It mentions the Brookhaven National Laboratory (BNL) and the Thomas Jefferson National Accelerator Laboratory (JLab). The report is co-chaired by Gordon Baym and Ann Fisher. The page also includes a sidebar with a thumbnail of the report cover and social media links.

**FOR IMMEDIATE RELEASE**

**A Domestic Electron Ion Collider Would Unlock Scientific Mysteries of Atomic Nuclei, Maintain U.S. Leadership in Accelerator Science, New Report Says**

WASHINGTON – The science questions that could be answered by an electron ion collider (EIC) – a very large-scale particle accelerator – are significant to advancing our understanding of the atomic nuclei that make up all visible matter in the universe, says a [new report](#) by the National Academies of Sciences, Engineering, and Medicine. Beyond its impact on nuclear science, the advances made possible by an EIC could have far-reaching benefits to the nation's science- and technology-driven economy as well as to maintaining U.S. leadership in nuclear physics and in collider and accelerator technologies.

The National Academies were asked by the U.S. Department of Energy (DOE) to examine the scientific importance of an EIC, as well as the international implications of building domestic EIC facility. The committee that conducted the study and wrote the report concluded that the science that could be addressed by an EIC is compelling and would provide long-elusive answers on the nature of matter. An EIC would allow scientists to investigate where quarks and gluons, the tiny particles that make up neutrons and protons, are located inside protons and neutrons, how they move, and how they interact together. While the famous Higgs mechanism explains the masses of the quarks, the most significant portion of the mass of a proton or neutron comes from its gluons and their interactions. Crucial questions that an EIC would answer include the origin of the mass of atomic nuclei, the origin of spin of neutrons and protons – a fundamental property that makes magnetic resonance imaging (MRI) possible, how gluons hold nuclei together, and whether emergent forms of matter made of dense gluons exist.

The report says a new EIC accelerator facility would have capabilities beyond all previous electron scattering machines in the U.S., Europe, and Asia. High energies and luminosities – the measure of the rate at which particle collisions occur – are required to achieve the fine resolution needed, and to reach such intensities and energy levels requires a collider where beams of electrons smash into beams of protons or heavier ions. Comparing all existing and proposed accelerator facilities around the world, the committee concluded that an EIC with high energy and luminosity, and highly polarized electron and ion beams, would be unique and in a position to greatly further our understanding of visible matter.

"An EIC would be the most sophisticated and challenging accelerator currently proposed for construction in the U.S. and would significantly advance accelerator science, and more specifically collider science and technologies, here and around the world," said committee co-chair Gordon Baym, Center for Advanced Study Professor Emeritus, George and Ann Fisher Distinguished Professor of Engineering Emeritus, and Research Professor at the University of Illinois at Urbana-Champaign. "The realization of an EIC is absolutely crucial to maintaining the health of the field of nuclear physics in the U.S. and would open up new areas of scientific investigation."

Currently, the Brookhaven National Laboratory (BNL) in Long Island, New York, has a heavy ion collider, and the Thomas Jefferson National Accelerator Laboratory (JLab) in Newport News, Virginia, has very energetic electron beams. Both labs have proposed design concepts for an EIC that would use their already available infrastructure, expertise, and experience. The report, without favoring one over the other, says that taking advantage of the existing facilities would make development of an EIC cost-effective and reduce associated risks that come with building a large accelerator facility. While both labs have well-developed designs for an EIC, both would require considerable R&D to fully deliver on the compelling science questions. The report states DOE R&D investment has been and would continue to be crucial to minimizing design risks in a timely fashion and to addressing outstanding accelerator challenges.

The committee added that along with advancing nuclear science, an EIC would also benefit other areas such as astrophysics, particle physics, accelerator physics, and theoretical and computational modeling. It would also play a valuable role in sustaining the U.S. nuclear physics workforce in the coming decades. Moreover, it would have a significant role in advancing more broadly the technologies that would result from the research and development undertaken in the implementation and construction of an EIC in the U.S. The report emphasizes that an EIC is the only high-energy collider being planned for construction in the U.S. currently, and building such a facility would maintain U.S. leadership in accelerator collider science while benefiting the physical sciences.

"The science that an EIC would achieve is simply unique and would ensure U.S. leadership in nuclear science as well as the accelerator science and technology of colliders around the world," said committee co-chair Ani Aprahamian, Freimann Professor of Experimental Nuclear Physics at the University of Notre Dame.

The study was sponsored by DOE. The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology, and medicine. The National Academies operate under an 1863 congressional charter to the National Academy of Sciences, signed by President Lincoln. For more information, visit <http://national-academies.org>.

**Contacts:**  
Kacey Templin, Media Relations Officer  
Joshua Blatt, Media Relations Associate  
Office of News and Public Information  
202-334-2138; e-mail [news@nas.edu](mailto:news@nas.edu)

# EIC Users' Group: News

## □ NAS Webinar and NAS report release: 07/24/2018

[http://www8.nationalacademies.org/onpinews/newsitem.aspx?](http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=25171&_ga=2.209086742.50427317.1532451645-138591744.1532451645)

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Click to  
download report!



The screenshot shows the NAS News website. At the top, there is a navigation bar with links: Home, About Us, Organization, Events & Activities, Resources, and Newsroom. A search bar is located on the right. Below the navigation bar, the page title "NEWS" is displayed, followed by "The National Academies of SCIENCES • ENGINEERING • MEDICINE". The date "July 24, 2018" is shown. The main headline is "FOR IMMEDIATE RELEASE" followed by "A Domestic Electron Ion Collider Would Unlock Scientific Mysteries of Atomic Nuclei, Maintain U.S. Leadership in Accelerator Science, New Report Says". The text of the report is visible, starting with "WASHINGTON – The science questions that could be answered by an electron ion collider (EIC) – a very large-scale particle accelerator – are significant to advancing our understanding of the atomic nuclei that make up all visible matter in the universe, says a new report by the National Academies of Sciences, Engineering, and Medicine." A thumbnail image of the report cover is shown on the right, with an arrow pointing to it from the "Click to download report!" text. The report cover features the title "An Assessment of U.S.-Based Electron-Ion Collider Science" and the NAS logo. At the bottom of the page, there is a "Contacts" section listing Kacey Templin, Media Relations Officer, and Joshua Blatt, Media Relations Associate, with their office and email information.

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## ○ Webinar on Tuesday, July 2014, 2018 - Public presentation and report release

Click to  
download report!

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**NEWS**  
The National Academies of  
SCIENCES • ENGINEERING • MEDICINE

July 24, 2018

**FOR IMMEDIATE RELEASE**

**A Domestic Electron Ion Collider Would Unlock Scientific Mysteries of Atomic Nuclei, Maintain U.S. Leadership in Accelerator Science, New Report Says**

WASHINGTON – The science questions that could be answered by an electron ion collider (EIC) – a very large-scale particle accelerator – are significant to advancing our understanding of the atomic nuclei that make up all visible matter in the universe, says a [new report](#) by the National Academies of Sciences, Engineering, and Medicine. Beyond its impact on nuclear science, the advances made possible by an EIC could have far-reaching benefits to the nation's science- and technology-driven economy as well as to maintaining U.S. leadership in nuclear physics and in collider and accelerator technologies.

The National Academies were asked by the U.S. Department of Energy (DOE) to examine the scientific importance of an EIC, as well as the international implications of building domestic EIC facility. The committee that conducted the study and wrote the report concluded that the science that could be addressed by an EIC is compelling and would provide long-elusive answers on the nature of matter. An EIC would allow scientists to investigate where quarks and gluons, the tiny particles that make up neutrons and protons, are located inside protons and neutrons, how they move, and how they interact together. While the famous Higgs mechanism explains the masses of the quarks, the most significant portion of the mass of a proton or neutron comes from its gluons and their interactions. Crucial questions that an EIC would answer include the origin of the mass of atomic nuclei, the origin of spin of neutrons and protons – a fundamental property that makes magnetic resonance imaging (MRI) possible, how gluons hold nuclei together, and whether emergent forms of matter made of dense gluons exist.

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The committee added that along with advancing nuclear science, an EIC would also benefit other areas such as astrophysics, particle physics, accelerator physics, and theoretical and computational modeling. It would also play a valuable role in sustaining the U.S. nuclear physics workforce in the coming decades. Moreover, it would have a significant role in advancing more broadly the technologies that would result from the research and development undertaken in the implementation and construction of an EIC in the U.S. The report emphasizes that an EIC is the only high-energy collider being planned for construction in the U.S. currently, and building such a facility would maintain U.S. leadership in accelerator collider science while benefiting the physical sciences.

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**Contacts:**  
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Joshua Blatt, Media Relations Associate  
Office of News and Public Information  
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- Webinar on Tuesday, July 2014, 2018 - Public presentation and report release
- Gordon Baym (Co-chair): Webinar presentation

“The committee finds that the science that can be addressed by an EIC is compelling, fundamental and timely.”

Click to  
download report!

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The committee that conducted the study and wrote the report concluded that the science that could be addressed by an EIC is compelling and would provide long-elusive answers on the nature of matter. An EIC would allow scientists to investigate where quarks and gluons, the tiny particles that make up neutrons and protons, are located inside protons and neutrons, how they move, and how they interact together. While the famous Higgs mechanism explains the masses of the quarks, the most significant portion of the mass of a proton or neutron comes from its gluons and their interactions. Crucial questions that an EIC would answer include the origin of the mass of atomic nuclei, the origin of spin of neutrons and protons – a fundamental property that makes magnetic resonance imaging (MRI) possible, how gluons hold nuclei together, and whether emergent forms of matter made of dense gluons exist. The report says a new EIC accelerator facility would have capabilities beyond all previous electron scattering machines in the U.S., Europe, and Asia. High energies and luminosities – the measure of the rate at which particle collisions occur – are required to achieve the fine resolution needed, and to reach such intensities and energy levels requires a collider where beams of electrons smash into beams of protons or heavier ions. Comparing all existing and proposed accelerator facilities around the world, the committee concluded that an EIC with high energy and luminosity, and highly polarized electron and ion beams, would be unique and in a position to greatly further our understanding of visible matter. "An EIC would be the most sophisticated and challenging accelerator currently proposed for construction in the U.S. and would significantly advance accelerator science, and more specifically collider science and technologies, here and around the world," said committee co-chair Gordon Baym, Center for Advanced Study Professor Emeritus, George and Ann Fisher Distinguished Professor of Engineering Emeritus, and Research Professor at the University of Illinois at Urbana-Champaign. "The realization of an EIC is absolutely crucial to maintaining the health of the field of nuclear physics in the U.S. and would open up new areas of scientific investigation." Currently, the Brookhaven National Laboratory (BNL) in Long Island, New York, has a heavy ion collider, and the Thomas Jefferson National Accelerator Laboratory (JLab) in Newport News, Virginia, has very energetic electron beams. Both labs have proposed design concepts for an EIC that would use their already available infrastructure, expertise, and experience. The report, without favoring one over the other, says that taking advantage of the existing facilities would make development of an EIC cost-effective and reduce associated risks that come with building a large accelerator facility. While both labs have well-developed designs for an EIC, both would require considerable R&D to fully deliver on the compelling science questions. The report states DOE R&D investment has been and would continue to be crucial to minimizing design risks in a timely fashion and to addressing outstanding accelerator challenges. The committee added that along with advancing nuclear science, an EIC would also benefit other areas such as astrophysics, particle physics, accelerator physics, and theoretical and computational modeling. It would also play a valuable role in sustaining the U.S. nuclear physics workforce in the coming decades. Moreover, it would have a significant role in advancing more broadly the technologies that would result from the research and development undertaken in the implementation and construction of an EIC in the U.S. The report emphasizes that an EIC is the only high-energy collider being planned for construction in the U.S. currently, and building such a facility would maintain U.S. leadership in accelerator collider science while benefiting the physical sciences. "The science that an EIC would achieve is simply unique and would ensure U.S. leadership in nuclear science as well as the accelerator science and technology of colliders around the world," said committee co-chair Ani Aprahamian, Freimann Professor of Experimental Nuclear Physics at the University of Notre Dame. The study was sponsored by DOE. The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology, and medicine. The National Academies operate under an 1863 congressional charter to the National Academy of Sciences, signed by President Lincoln. For more information, visit <http://national-academies.org>. **Contacts:** Kacey Templin, Media Relations Officer Joshua Blatt, Media Relations Associate Office of News and Public Information 202-334-2138; e-mail [news@nas.edu](mailto:news@nas.edu)

# EIC Users' Group: News

## □ NAS Webinar and NAS report release: 07/24/2018

[http://www8.nationalacademies.org/onpinews/newsitem.aspx?](http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=25171&_ga=2.209086742.50427317.1532451645-138591744.1532451645)

[RecordID=25171&\\_ga=2.209086742.50427317.1532451645-138591744.1532451645](http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=25171&_ga=2.209086742.50427317.1532451645-138591744.1532451645)

Click to  
download report!

- Webinar on Tuesday, July 2014, 2018 - Public presentation and report release
- Gordon Baym (Co-chair): Webinar presentation

“The committee finds that the science that can be addressed by an EIC is compelling, fundamental and timely.”

- More details will be provided by Ernst Sichtermann (LBL) in this session.

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**FOR IMMEDIATE RELEASE**  
**A Domestic Electron Ion Collider Would Unlock Scientific Mysteries of Atomic Nuclei, Maintain U.S. Leadership in Accelerator Science, New Report Says**

WASHINGTON – The science questions that could be answered by an electron ion collider (EIC) – a very large-scale particle accelerator – are significant to advancing our understanding of the atomic nuclei that make up all visible matter in the universe, says a new report by the National Academies of Sciences, Engineering, and Medicine. Beyond its impact on nuclear science, the advances made possible by an EIC could have far-reaching benefits to the nation's science- and technology-driven economy as well as to maintaining U.S. leadership in nuclear physics and in collider and accelerator technologies.

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"An EIC would be the most sophisticated and challenging accelerator currently proposed for construction in the U.S. and would significantly advance accelerator science, and more specifically collider science and technologies, here and around the world," said committee co-chair Gordon Baym, Center for Advanced Study Professor Emeritus, George and Ann Fisher Distinguished Professor of Engineering Emeritus, and Research Professor at the University of Illinois at Urbana-Champaign. "The realization of an EIC is absolutely crucial to maintaining the health of the field of nuclear physics in the U.S. and would open up new areas of scientific investigation."

Currently, the Brookhaven National Laboratory (BNL) in Long Island, New York, has a heavy ion collider, and the Thomas Jefferson National Accelerator Laboratory (JLab) in Newport News, Virginia, has very energetic electron beams. Both labs have proposed design concepts for an EIC that would use their already available infrastructure, expertise, and experience. The report, without favoring one over the other, says that taking advantage of the existing facilities would make development of an EIC cost-effective and reduce associated risks that come with building a large accelerator facility. While both labs have well-developed designs for an EIC, both would require considerable R&D to fully deliver on the compelling science questions. The report states DOE R&D investment has been and would continue to be crucial to minimizing design risks in a timely fashion and to addressing outstanding accelerator challenges.

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The study was sponsored by DOE. The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology, and medicine. The National Academies operate under an 1863 congressional charter to the National Academy of Sciences, signed by President Lincoln. For more information, visit <http://national-academies.org>.

**Contacts:**  
 Kacey Templin, Media Relations Officer  
 Joshua Blatt, Media Relations Associate  
 Office of News and Public Information  
 202-334-2138; e-mail [news@nas.edu](mailto:news@nas.edu)

# EIC Users' Group: Size and Demographics

## □ Size and demographics (1)

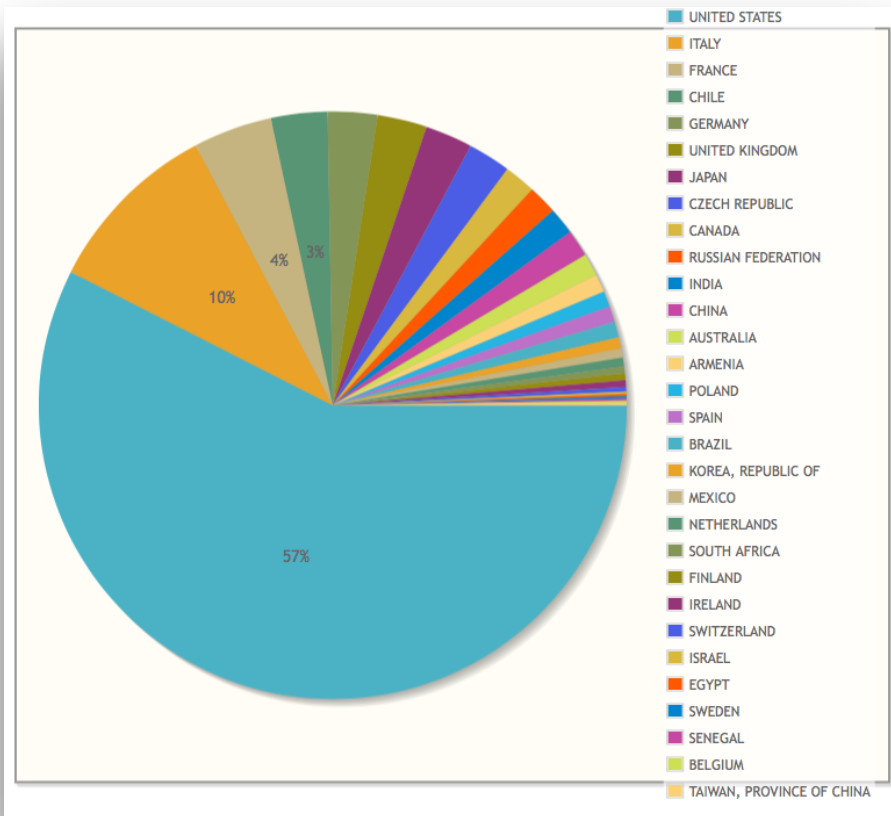
- EICUG organization established in summer 2016
- In numbers....: **807 members** (Experimental scientists: 465 / Theory scientists: 158 / Accelerator scientists: 142 / Support: 3 / Other: 39), 171 institutions, 30 countries, 7 world regions
- World map:



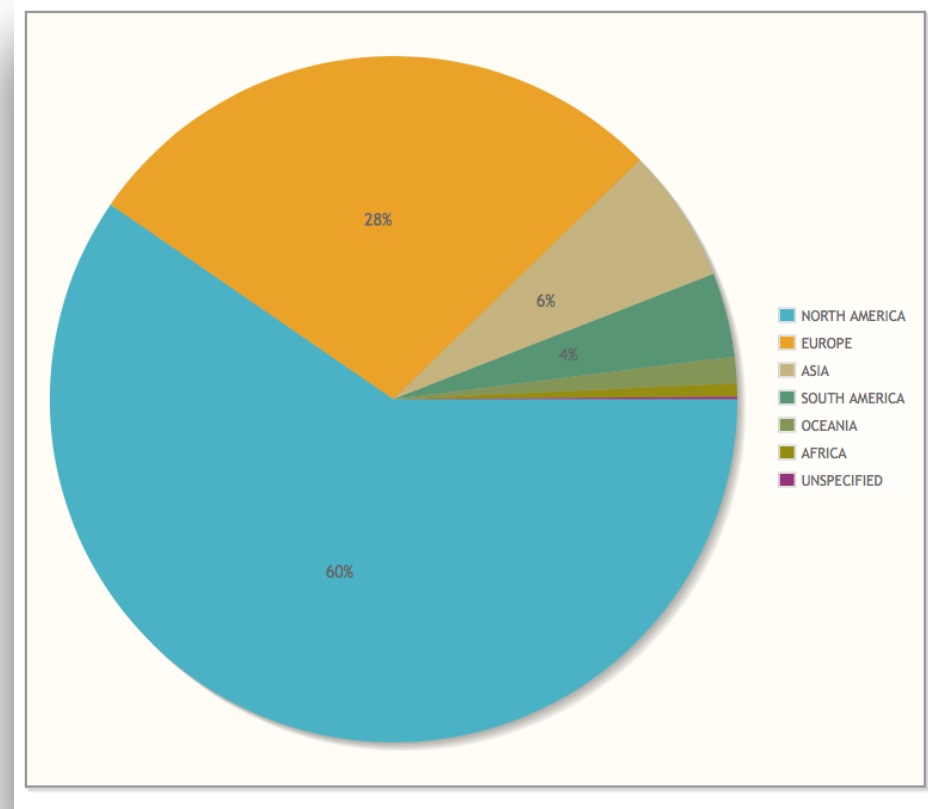
# EIC Users' Group: Size and Demographics

## Size and demographics (2)

### Members by Country:



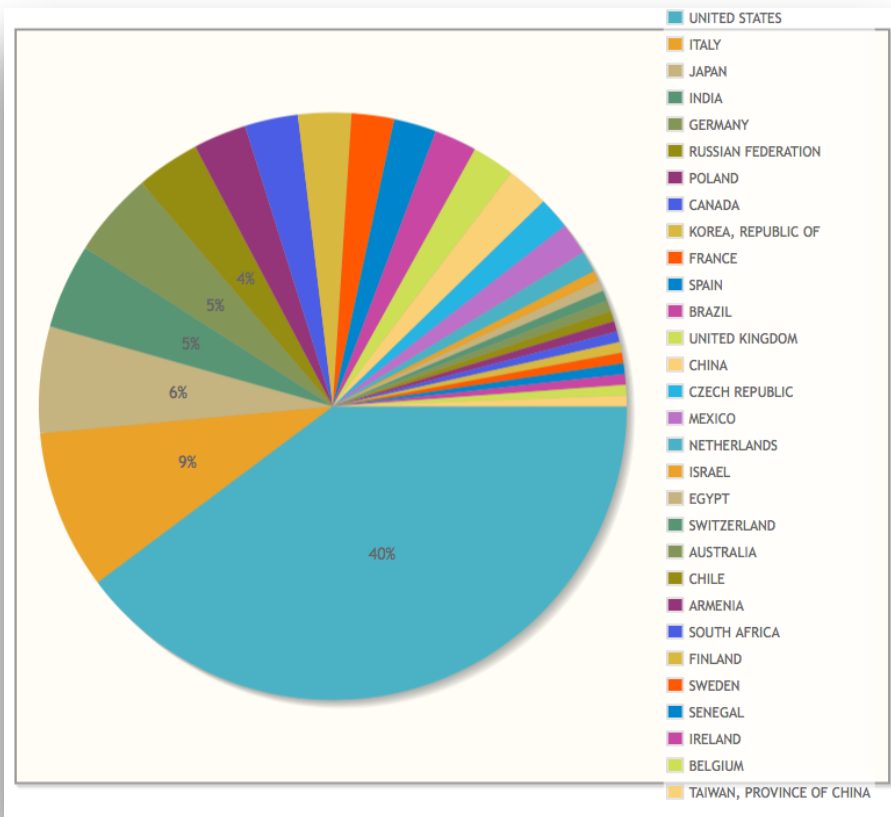
### Members by Region:



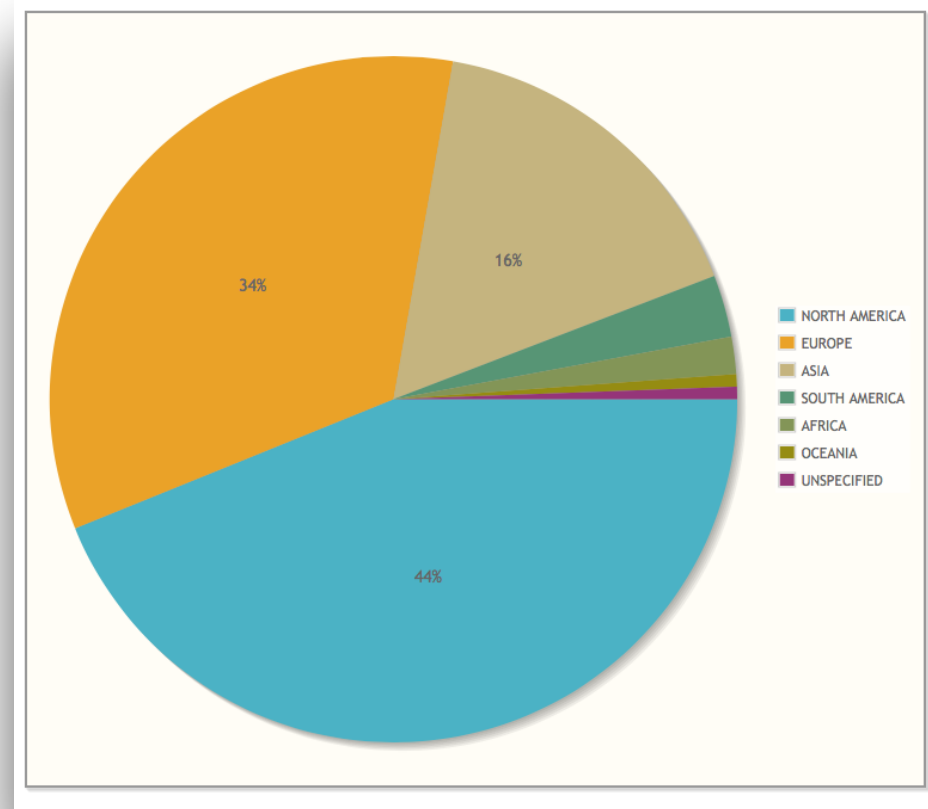
# EIC Users' Group: Size and Demographics

## Size and demographics (3)

### Institutions by Country:



### Institutions by Region:





# EIC Users' Group: Regional Highlights

S. Dalla-Torre

- ❑ Major development regarding Italian EIC participation
  - 2017/2018: Several direct discussions with BNL and JLab leadership concerning Italian EIC participation of INFN
  - Participation of multiple INFN members in EIC activities such as EICUG group meeting in Trieste (July 2018), EIC R&D program, EICUG SC work
  - Major step in June 2018: Approval of a new domestic collaboration and related activities dedicated to EIC
    - Formally starting in 2019 / Reference scientific committee INFN CSN 3 (National committee for nuclear physics)
    - 11 INFN unit: Bari, Bologna, Catania, Ferrara, Frascati, Genova, Padova, Roma 1, Roma 2, Torino and Trieste
    - Participants: ~50
    - Goals: Network activity / INFN support towards R&D activities
    - Perspective: Contribution to the EIC program and experiments at EIC

Internationalization critical  
Strong EU interest in EIC program (EICUG 2017 Meeting in Trieste)



# EIC Users' Group: Lab News

- EIC Science Centers at BNL/Stony Brook University and JLab
- Dedicated **EIC Science Centers at both BNL/Stony Brook University and JLab**
- BNL/Stony Brook University: Center for Frontiers in Nuclear Science

□ Director: Abhay Deshpande



□ WWW-page: <https://www.stonybrook.edu/cfns/>

The mission of this Center is to promote and facilitate the realization of the U.S. based EIC by enhancing the science case and collaborations amongst the scientists around the world interested in the EIC.

- JLab: EIC2@JLab



□ Director: Rik Yoshida

□ WWW-page: <https://www.eiccenter.org>

The Electron-Ion Collider Center at Jefferson Lab (EIC2@JLab) is an organization to advance and promote the science program at a future electron-ion collider (EIC) facility. Particular emphasis is on the close connection of EIC science to the current Jefferson Lab 12 GeV CEBAF science program.



# EICUG Committees

## □ Steering Committee (SC)

### □ Vice Chair / Chair:

- Vice Chair: Charles Hyde (ODU)
- Chair: Bernd Surrow (Temple University)

### □ Ex-officio Chair Institutional Board:

- Christine Aidala (University of Michigan)

### □ Three regular members:

- John Arrington (ANL)
- Marco Radici (INFN Pavia, Italy)
- Ernst Sichtermann (LBNL)

### □ EU representative:

- Daniel Boer (University of Groningen, NL)

### □ International representative:

- Yuji Goto (RIKEN, Japan)

### □ Weekly BlueJeans Working

**Meetings:** 10:00AM-11:00AM

(EDT) / Evernote online

Agenda and Notes

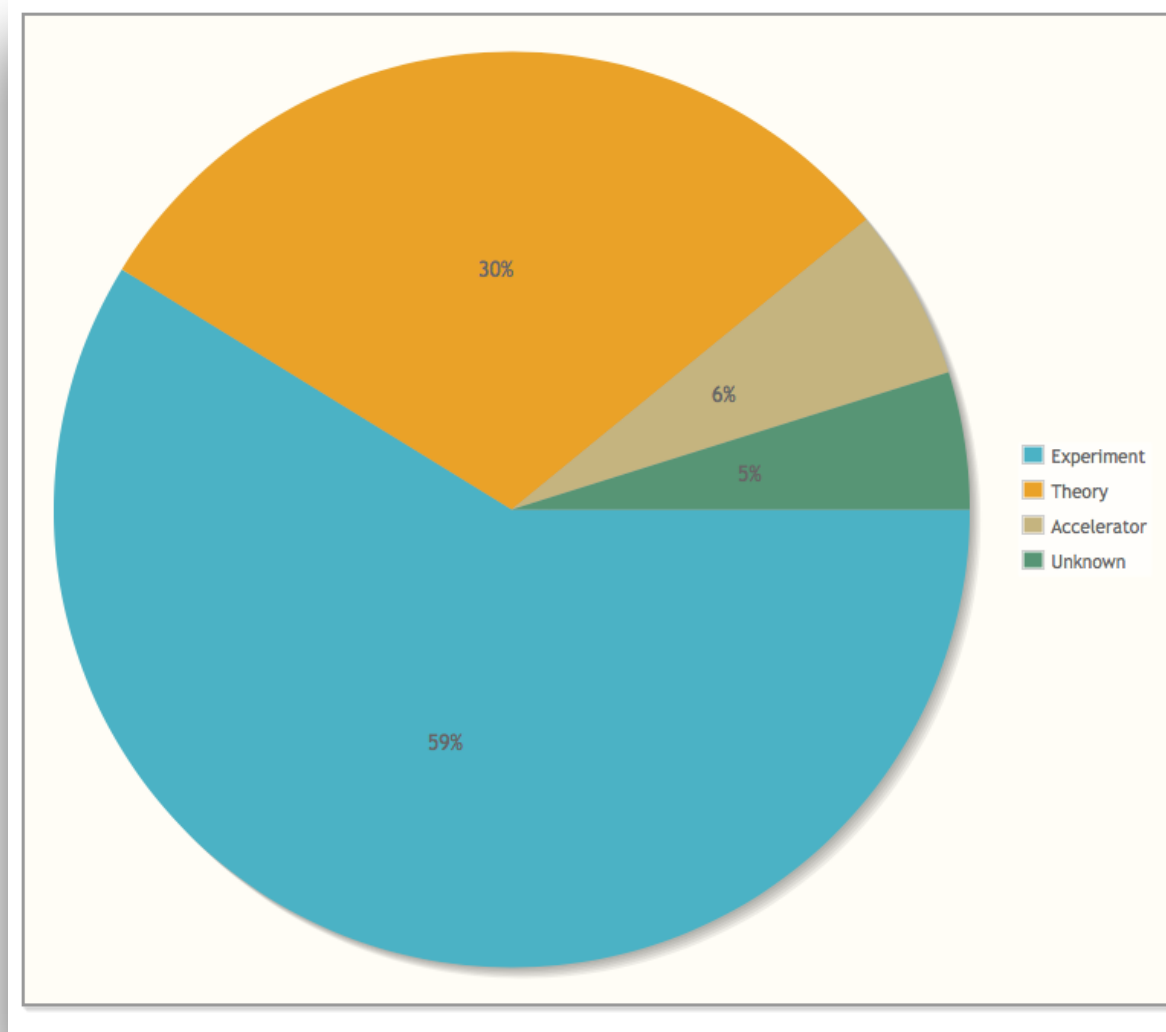
### □ EICUG Newsletter Status

Updates



# EICUG Committees

- **Institutional Board (IB):** Chair: Christine Aidala (University of Michigan)





# EICUG Committees



# EICUG Committees

- **Election & Nomination Committee (E&N):** 5 members drawn from entire EICUG
  - Kawtar Hafidi (ANL)
  - Paul Newman (University of Birmingham)
  - Richard Milner (MIT) (Chair)
  - Raju Venugopalan (BNL)
  - Christian Weiss (JLab)



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## □ Charge:

Once the Steering Committee is in place, the SC Chair will put in place an Election and Nominating (E&N) Committee consisting of five members drawn from the entire EICUG membership, with no more than two members from the same institution, and excluding members of the SC. The E&N Committee will elect by majority vote its own Chair. The term of each member on the E&N Committee is 1 year. Members may serve no more than two consecutive terms on the Nominating Committee. The E&N Committee is charged with drawing up a slate of candidates for all open positions on the Steering Committee, to be presented at the next meeting of the EICUG membership. The slate shall include at least two candidates for each open position. In the event that a full slate of six candidates cannot be identified for the three at-large SC positions, the three candidates who receive the largest vote totals will still be deemed as the newly elected at-large members. In addition, the E&N Committee conducts the elections. To avoid the possibility of conflict of interest, commercial companies will not vote in the elections.



# EICUG Committees



# EICUG Committees

- **NEW Conference & Talks Committee (E&N):** 5 members drawn from entire EICUG
  - Carlos Munoz Camacho (IPN-Orsay)
  - Yulia Furletova (JLab)
  - Barbara Pasquini (Pavia)
  - Lijuan Ruan (BNL)
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- ❑ **Charge:**
  - ❑ **Receive requests for EIC speakers and nominate appropriate speakers soliciting input from the EICUG in a procedure that is timely, equitable and transparent to all EICUG members.** The procedure by which this is done, and subsequent amendment to this procedure, is to be determined by the conference and talks committee. The procedure, and subsequent significant amendments should be approved by the Steering Committee, and publicized to the EICUG.
  - ❑ **Actively contact upcoming conference and meeting organizers** and inform them of the service offered by EICUG Conference & Talks Committee to provide appropriate EIC speakers.
  - ❑ **Report to the EICUG Steering Committee periodically.**



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## R&D programs / Ad-hoc initiatives / WG groups



## R&D programs / Ad-hoc initiatives / WG groups

- Generic Detector R&D program for an EIC



## R&D programs / Ad-hoc initiatives / WG groups

- Generic Detector R&D program for an EIC
  - In January 2011, BNL, in association with JLab and the DOE Office of NP, announced a generic detector R&D program to address the scientific requirements for measurements at a future EIC facility.



## R&D programs / Ad-hoc initiatives / WG groups

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- Goals:



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# R&D programs / Ad-hoc initiatives / WG groups

## □ Ad-hoc initiatives

- Detector ad-hoc workshops were initiated to stimulate discussions beyond the current EIC R&D program
- **Streaming Readout:**
  - WWW-page: January 29-30, 2018, MIT, [https://eic.jlab.org/wiki/index.php/Streaming\\_Readout\\_II](https://eic.jlab.org/wiki/index.php/Streaming_Readout_II)
  - Conveners: Doug Hasell (MIT) and Jan Bernauer (MIT)
- **Tracking - Gas and silicon detectors:**
  - WWW-page: July 24, 2018, UVA, <https://indico.cern.ch/event/722363/timetable/#20180724.detailed>
  - Conveners: Kondo Gnanvo (UVA) / Matt Posik (Temple University) / Laura Gonella (University of Birmingham)
- **Calorimetry:**
  - WWW-page: April 9, 2018, Remote Meeting <https://indico.bnl.gov/event/4468/>
  - Tanja Horn (CUA) / Craig Woody (BNL) / Edward Kistenev (BNL)
- **Particle-ID:**
  - Conveners Silvia Dalla Torre (INFN Trieste) / Marco Contalbrigo (INFN Ferrara) / Greg Kalisy (CUA)



# R&D programs / Ad-hoc initiatives / WG groups

## □ IR / Luminosity Technical Working Group:

- Charge: The EICUG IR working group's mission is to provide an **interface between the machine design / IR design and the physics needs to ensure that the EIC physics program is properly implemented** with a broad range of physics measurements in particular those requiring forward / backward instrumentation. This should include **challenging questions** related to the **measurement of nuclear fragments for a variety of processes and associated measured energy / momentum range and spacial acceptance**. The requirements for the IR design should be determined from detailed simulations for proposed processes. In addition to specific aspects of the IR design, the working group should also address the scheme for luminosity measurement and its impact on the machine element layout. It is strongly suggested that the new EICUG IR working group **interface directly with existing efforts at BNL and JLab**. The working group will be **open to all members of the EICUG**. It will **communicate via a new mailing list** and **organize regular online and in-person meetings that enable broad and active participation from within the EICUG as a whole**.

### ○ Conveners:

Physics: Charles Hyde ([chyde@odu.edu](mailto:chyde@odu.edu)) (ODU) and Alexander Kiselev ([kisselev@mail.desy.de](mailto:kisselev@mail.desy.de)) (BNL)  
 Machine: Christoph Montag ([montagc@bnl.gov](mailto:montagc@bnl.gov)) (BNL) and Vasiliy Morozov ([morozov@jlab.org](mailto:morozov@jlab.org)) (JLab)

- Presentation about plans on Thursday, August 2, 2018 / [Google-based mailing list](#)



# R&D programs / Ad-hoc initiatives / WG groups

## □ Polarization Technical Working Group:

- Charge: The EICUG Polarimetry working group's mission is to **plan and/or develop the optimal methods and techniques for measuring the absolute polarization (and polarization direction) of the electron and ion beams with high precision**. It is strongly suggested that the new EICUG Polarimetry working group **interface directly with existing efforts at BNL and JLab**, and with the other EICUG working groups. The working group will be **open to all members of the EICUG**. It will communicate via a new mailing list and **organize regular online and in-person meetings that enable broad and active participation from within the EICUG as a whole**.
- **Conveners:**  
  
Elke Aschenauer ([elke@bnl.gov](mailto:elke@bnl.gov)) (BNL) and Dave Gaskell ([gaskelld@jlab.org](mailto:gaskelld@jlab.org)) (JLab)
- Presentation about plans on Thursday, August 2, 2018 / [Google-based mailing list](#)



# R&D programs / Ad-hoc initiatives / WG groups

## □ Software Technical Working Group:

- Charge: The EICUG Software working group's **initial focus will be on simulations of physics processes and detector response to enable quantitative assessment of measurement capabilities and their physics impact**. This will be pursued in a manner that is accessible, consistent, and reproducible to the EICUG as a whole. It will embody simulations of all processes that make up the EIC science case as articulated in the White-paper. The Software working group is to engage with new major initiatives that aim to further develop the EIC science case, including for example the upcoming INT program(s), and is anticipated to play key roles also in the preparations for the EIC project(s) and its critical decisions. **The working group will build on the considerable progress made within the EIC Software Consortium (eRD20) and other efforts**. The evaluation or development of experiment-specific technologies, e.g. mass storage, clusters or other, are outside the initial scope of this working group until the actual experiment collaborations are formed. The working group will be **open to all members of the EICUG to work on EICUG related software tasks**. It will **communicate via a new mailing list and organize regular online and in-person meetings that enable broad and active participation from within the EICUG as a whole**.
- **Conveners:**  
Markus Diefenthaler ([mdiefent@jlab.org](mailto:mdiefent@jlab.org)) (JLab) / David Blyth ([dblyth@anl.gov](mailto:dblyth@anl.gov)) (ANL)
- Presentation about plans on Thursday, August 2, 2018 / [Google-based mailing list](#)



# R&D programs / Ad-hoc initiatives / WG groups

## □ Physics Working Groups:

### ○ Motivation:

- INT workshop series was instrumental for the EIC Whitepaper formulation and thus the input to the recently completed NAS study.
- Moving forward it is essential to engage the entire EICUG with organized working groups

### ○ INT Working groups / Whitepaper structure:

- Longitudinal Spin of the Nucleon
- Confined Motion of Partons in Nucleons: TMDs
- Spatial Imaging of Quarks and Gluons
- Physics of High Gluon Densities in Nuclei
- Quarks and Gluons in Nucleus

### ○ Dedicated discussion session on Thursday, August 2, 2018

- Organization around physics topics?
- Organization around probes?



# Upcoming conferences / initiatives / meetings

## □ Conferences:

- **SPIN 2018**: Ferrara, Italy, September 10-14, 2018, <http://spin2018.unife.it/committees/>
- **DNP2018**: Waikoloa Village, HI, October 23-27, 2018, 5<sup>th</sup> Joint Meeting of the Nuclear Physics Divisions of the APS and JPS, (Several EIC-related workshop / sessions) <https://www.phy.ornl.gov/hawaii2018/>
- **QNP2018**: Tsukuba, Japan, November 13-17, 2018, <http://www-conf.kek.jp/qnp2018/>

## □ Workshops:

- **INT Workshop**: Probing Nucleons and Nuclei in High-Energy Collisions, October 1 - November 16, 2018. <http://www.int.washington.edu/PROGRAMS/18-3/> - More details in Yuri Kovchegov's talk on Thursday!

## □ DIS2018:

- Several EIC related presentations / Formulation of DIS Strategy Document as input to European Particle Physics Strategy Update - 1st version circulated by A. Levy (Tel Aviv University)

## □ Visit to Hill from EICUG / Discussion started within the EICUG SC!



# Media

- The **release of the NAS report** will likely **generate a lot of interest by the media**. In case you receive media requests and wish to refer them to the Laboratories, staff is available and their contact information is provided below.
- **Brookhaven Lab Press Contact:** <http://www.bnl.gov/newsroom/>  
  
**Peter Genzer**, Manager, Media and Communications Office, (631) 344-3174, [genzer@bnl.gov](mailto:genzer@bnl.gov)
- **Jefferson Lab Press Contact:** <http://www.jlab.org/pressroom/>  
  
**Lauren Hansen**, Communications Manager, (757) 269-7689, [lhansen@jlab.org](mailto:lhansen@jlab.org)
- **Brochure** (EICUG Document section):  
  
[http://www.eicug.org/web/sites/default/files/EIC\\_Brochure.pdf](http://www.eicug.org/web/sites/default/files/EIC_Brochure.pdf)
- **Fact sheet** (EICUG Document section):  
  
[http://www.eicug.org/web/sites/default/files/EIC\\_OnePage\\_FactSheet.pdf](http://www.eicug.org/web/sites/default/files/EIC_OnePage_FactSheet.pdf)
- Additional information such as a list of '**Frequently Asked Questions**' is available from the EICUG Media link:  
  
<http://www.eicug.org/web/media>
- As a courtesy, we would like to ask also that you inform BNL and JLab staff of any media requests; this will be of great help in tracking EIC coverage in the press.



# Communication

## □ Updated WWW-page:

- Link: <http://www.eicug.org/web/>
- New Media and Science (Thanks to Marco Radici) section
- WWW-support: Jinlong Zhang (SBU)

## □ Mailing lists:

- Google-based mail system
- Support: Nils Feege (SBU)

**Electron-Ion Collider User Group**  
The world's most powerful microscope for studying the "glue" that binds the building blocks of visible matter.

**HOME** JOIN EICUG SCIENCE ORGANIZATION PHONEBOOK EVENT CALENDAR DOCUMENTS MEDIA LOGIN

Welcome!

This is the home page of the Electron-Ion Collider User Group (EICUG).

The EICUG consists of more than 800 physicists from over 170 laboratories and universities from around the world who are working together to realize a powerful new facility in the United States with the aim of studying the particles, gluons, which bind all the observable matter in the world around us. This new facility, known as the Electron-Ion Collider (EIC), would collide intense beams of spin-polarized electrons with intense beams of both polarized nucleons and unpolarized nuclei from deuterium to uranium. Detector concepts are now being developed to detect the high-energy scattered particles as well as the low-energy debris as a means to definitively understand how the matter we are all made of is bound together.

**News**

The **committee assessment of the EIC science case by the National Academy of Sciences, Engineering and Medicine (NAS)** has been presented in a Webinar on Tuesday, July 24, 2018: **"The committee unanimously finds that the science that can be addressed by an EIC is compelling, fundamental, and timely."**

- **NAS News Release and Report** (Click on "Download Free PDF" and then click on "Download as Guest")
- Joint Statement by BNL, JLab and EICUG:
  - **BNL WWW-page**
  - **JLab WWW-page**

**Announcements**

The next **EIC User Meeting** will take place at the Catholic University of America in Washington DC. Dates are July 30 - August 3, 2018. Preceding the users meeting is a one day detector workshop on July 29, 2018.

The **INT Program "Probing Nucleons and Nuclei in High Energy Collisions"** (INT-18-3) will take place from October 1 - November 16, 2018. See the official **website** of this program for more details.

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# Summary



## Summary

- Highlight: Release of NAS report - VERY EXCITING



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Committee on U.S.-Based Electron-Ion Collider Science Assessment

Board on Physics and Astronomy

Division on Engineering and Physical Sciences

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- We need you! Let us know where you would like to contribute!!

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