Community Communication Activities

Louise Suter, Fermilab

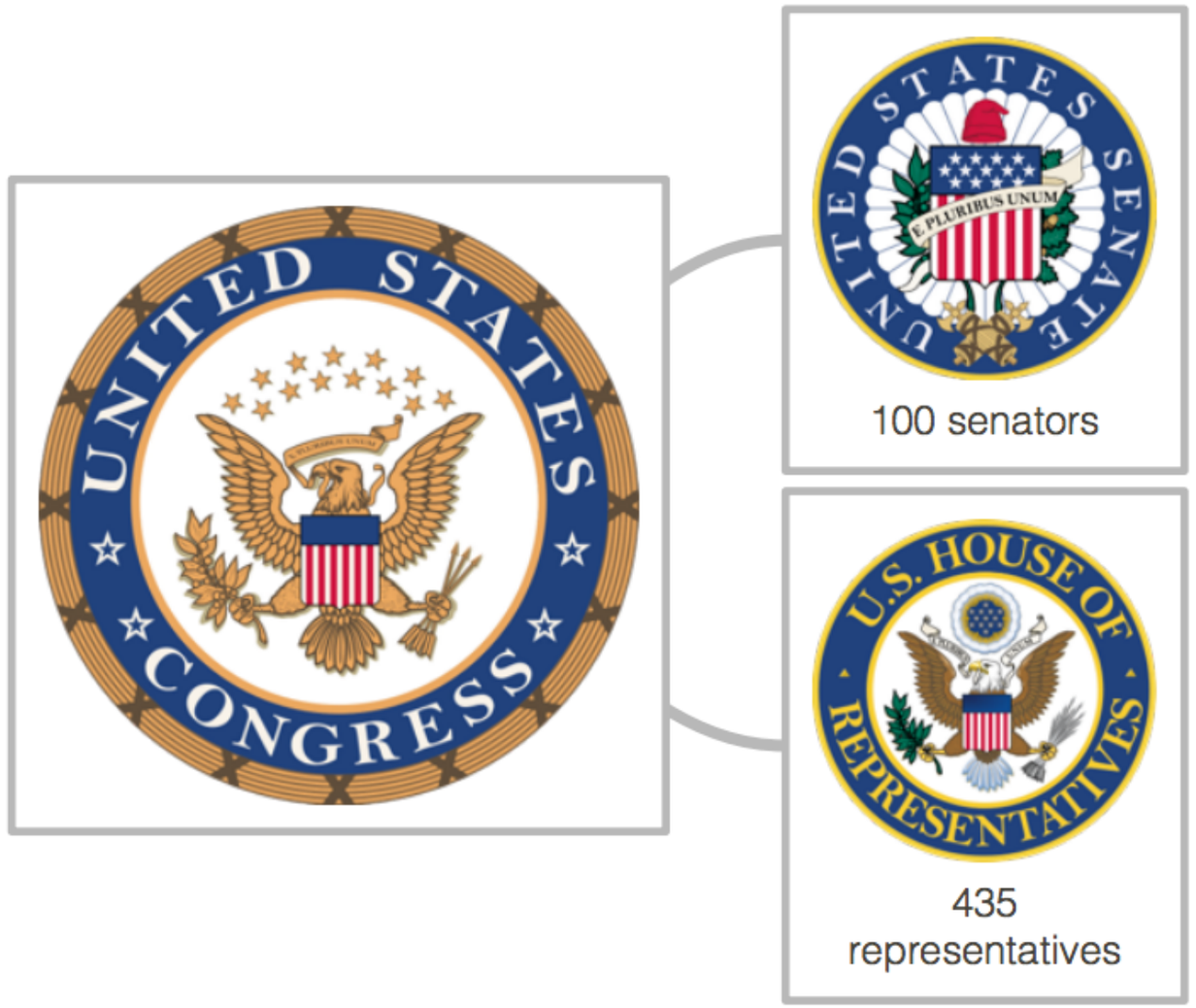
For USLUA, SLUO, and FNAL UEC
HEPAP, June 6th 2017

Annual Users DC trip Overview

Purpose: to visit with as many Congressional members and relevant staff offices as possible, as well as with particular representatives of the administration and funding agencies

Joint UEC/SLUO/USLUO effort – through election represent nearly entire US HEP user community

Message: garner support for funding of physical science research in general, and HEP in particular.

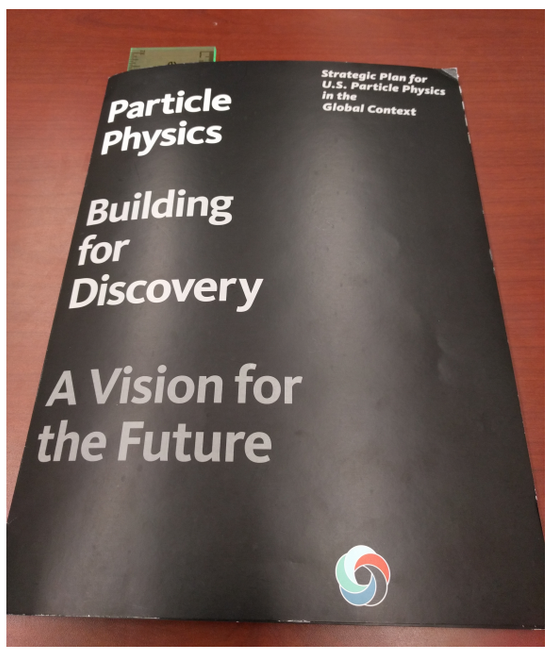


Running for ~35 yrs

HEP DC Trip basics

- Use algorithm to assign trip attendees to congresspeople based on where people lived/worked/voted/have family.
- Over the three day trip we visit offices of congresspeople, generally meeting with a staffer.
- Visit in teams of two and we try to get a mix of experience and background
- Bring a packet of material on HEP, to support our message and help lead the conversation
- Hold multiple practice sessions to teach people about the appropriations process, meeting etiquette, and the material

Front



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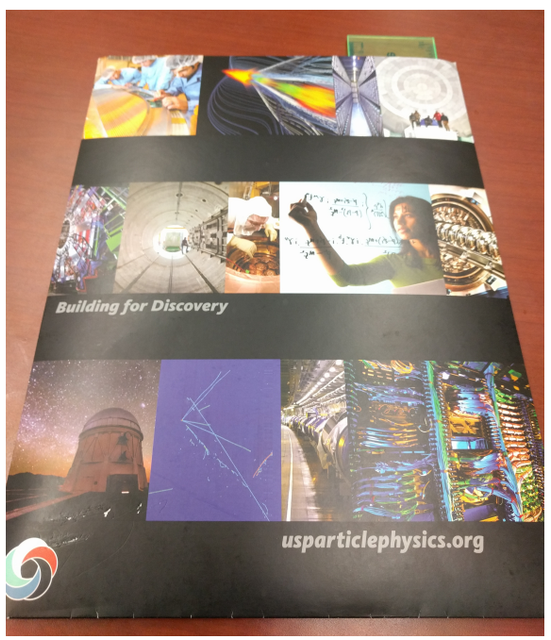


Center

Summary of 2017 trip

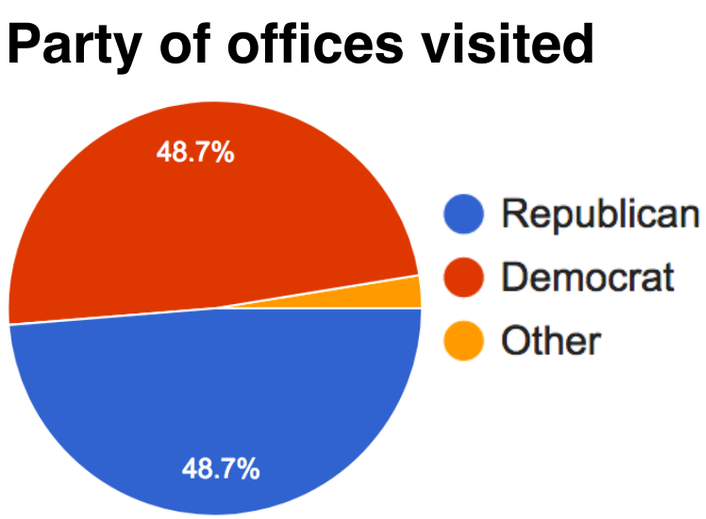
- 54 trip attendees
  - 24 from UEC,10 from SLUO,
    20 from USLA
  - Of which 24/54 are ‘young’ (grad students/ post docs) and 21/54 were women
- Contacted 78/100 senators. Meetings were scheduled with 69 offices **(69% of senate)**
- Contacted 338/435 congressional districts. Meeting scheduled with 307 **(70% of house)**
- None scheduled meetings don’t mainly correspond to actual ‘no’s’.
  - Some offices respond they are too busy and we arranged to drop off materials or do not respond at all.
- Trip 29-31st of March 2017

FNAL student and postdoc association on trip

Summary of 2017 trip

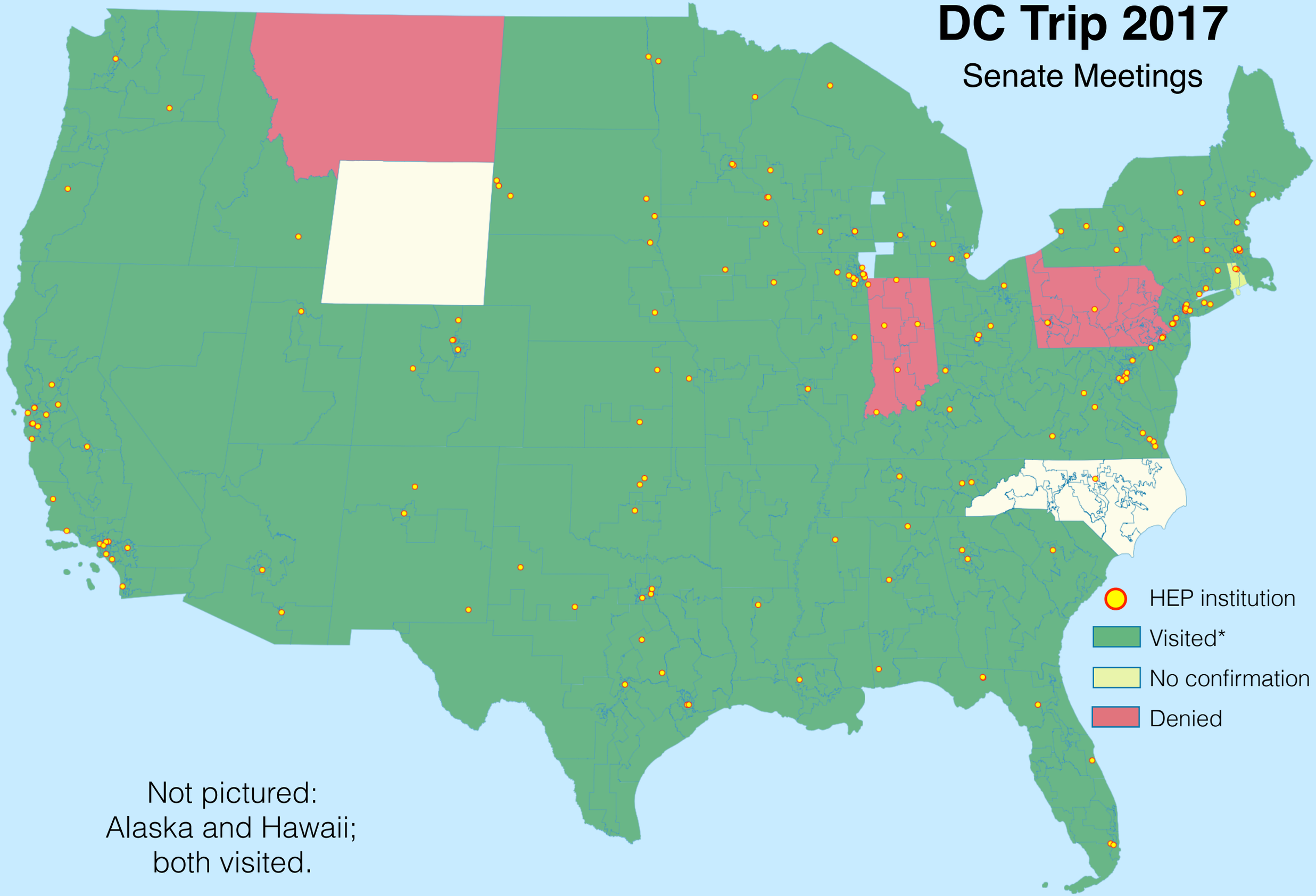
- Had meeting with all of the ‘big 8’ committees (first time). Thanks to Prof. Breese Quinn, Uni. of Mississippi who led the organization of these meetings
  - House Subcommittees
    - Approp: Commerce, Justice, Science
    - Approp: Energy & Water Development
    - Science, Space & Tech: Energy
    - Science, Space & Tech: R&T
  - Senate Subcommittees
    - Approp: Commerce, Justice, Science
    - Approp: Energy & Water Development
    - Commerce, Science, & Transportation: Space, Science and Competitiveness
    - Energy and Natural Resources: Energy

- Equal coverage of offices from both parties



DC Trip 2017

Senate Meetings

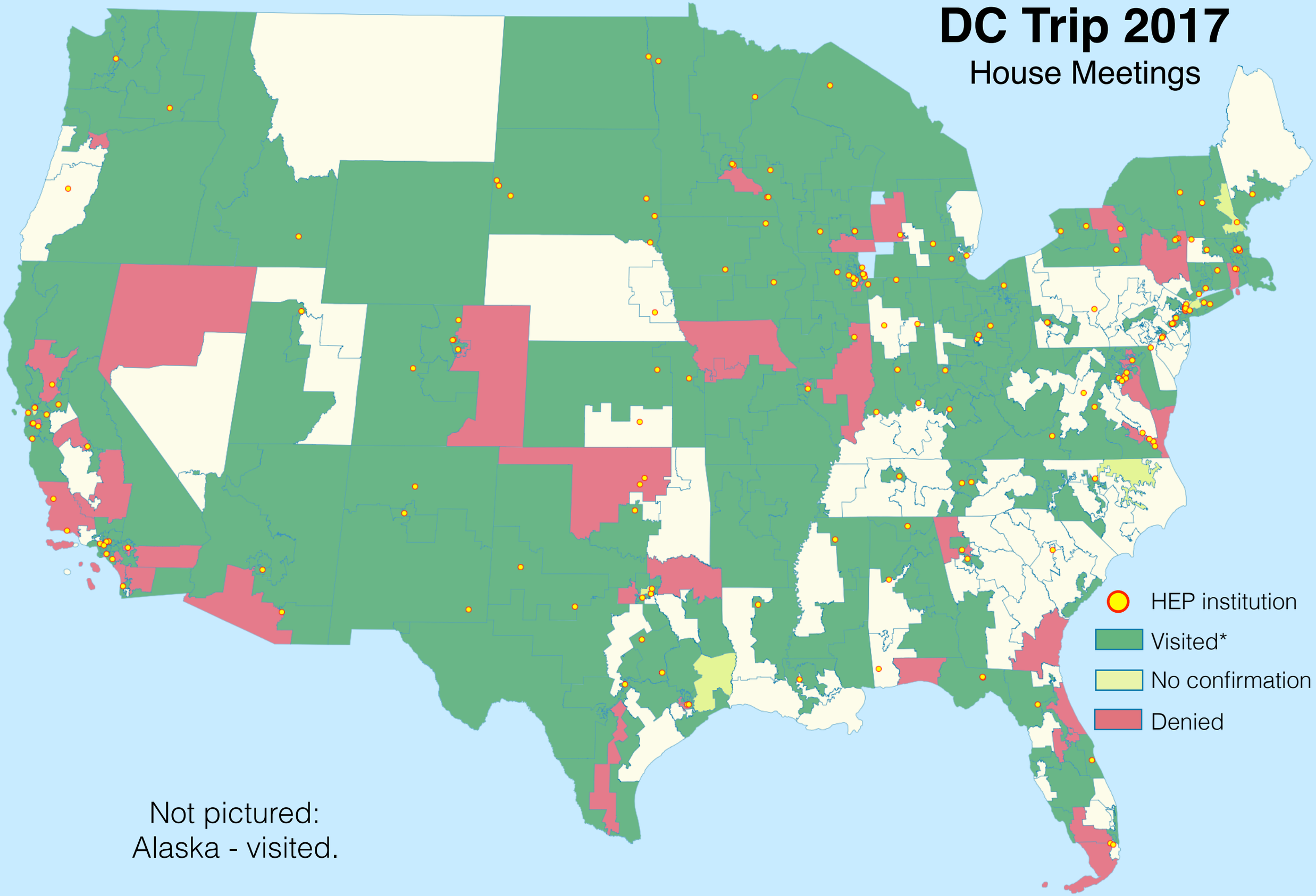


Not pictured:
Alaska and Hawaii;
both visited.

* one *or* two Senators

DC Trip 2017

House Meetings



Not pictured:
Alaska - visited.

New Community Communication Material

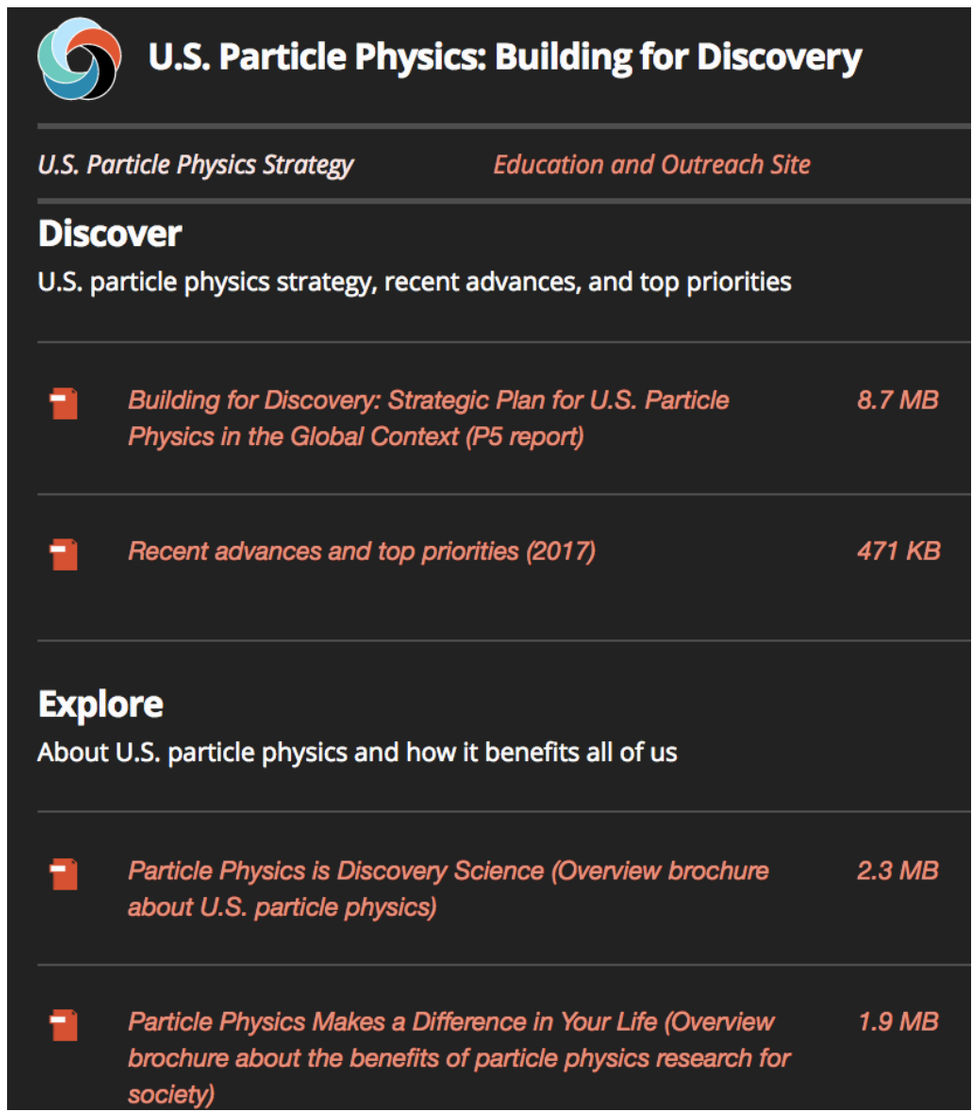
- In late 2016 groups started a push to make new communication material for the US HEP community to use in all the communication needs, including used for Users 2017 DC trip
- A previous Introduction to HEP brochure, which was put together by the three users groups and DFP, had served this group well for many years but was getting dated
- Text was worked on as joint effort by the users groups and DPF EC. Short time available meant things had to move quickly but the process was helped by the fact that we could build on older version of material

New Community Communication Material

- Produced updated version of P5 2-pager
- Two new documents put together a
  - A new ‘What is HEP’ document
  - A new ‘Benefits of HEP’ document

All available from US Particle Physics website and designed to go inside P5 folder

Folder



http://www.usparticlephysics.org/

Received very positive feedback on all the new material

P5 'Two pager'

Building for Discovery

Strategic Plan for
U.S. Particle Physics
in the Global Context

usparticlephysics.org

The P5 Report provides the strategy and priorities for U.S. investments in particle physics for the coming decade.

The top four priorities in 2017

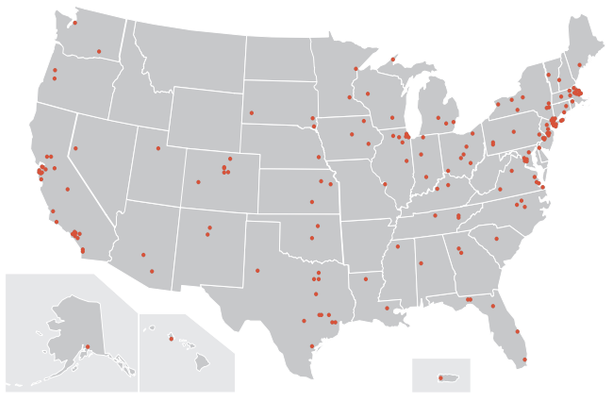
Advance the High-Luminosity LHC (HL-LHC) accelerator and detector upgrade projects on schedule, continuing the highly successful bilateral partnership with Europe. This is P5's highest-priority near-term large project.

Advance the Long-Baseline Neutrino Facility (LBNF) and Deep Underground Neutrino Experiment (DUNE), working with international partners to move forward with the engineering design, construction site preparation, and long-lead procurements. This is P5's highest-priority large project in its time frame.

Support the existing construction projects enabling the next major discoveries in particle physics, including the ATLAS and CMS upgrades, LSST, DESI, Mu2e, Muon g-2, LHCb, LZ, ADMX-G2, and SuperCDMS-SNOLAB.

Balance scientific research with facility operations and the carefully selected portfolio of small, medium, and large projects that together facilitate the success of the community's strategic vision.

These carefully chosen investments will enable a steady stream of exciting new results for many years to come and will maintain U.S. leadership in key areas.



Particle physics is both global and local Scientists, engineers, and technicians at more than 160 universities, institutes, and laboratories throughout the U.S. are working in partnership with their international colleagues to build high-tech tools and components, conduct scientific research, and train and educate the next generation of innovators. Particle physics activities in the U.S. attract some of the best scientists from around the world.

Recent results

Higgs boson exploration. The LHC outperformed expectations, generating as many particle collisions in 2016 as in all previous years combined and at almost double the energy. On average, about one new Higgs boson was produced per second. At this rate, the LHC will have enormous discovery potential for many years to come.

Promising neutrino results. New measurements by the NOνA experiment started addressing key questions about neutrinos, such as the arrangement of their masses and how much they mix, and the MicroBooNE experiment provided important experience with the technology for DUNE.

Dark matter. The world's best constraints on the identity of the mysterious dark matter were obtained by the LUX experiment.

Accelerator advances. There were several important developments, including operating the world's highest power beams for neutrino physics; constructing a successful prototype of the strongest accelerator magnet ever built, for use in the future High-Luminosity LHC (HL-LHC); accelerating positrons by plasma wake fields; and demonstrating multi-stage acceleration in laser-driven plasmas.

New configurations of matter. The LHCb experiment discovered new states that cannot be explained as ordinary two- or three-quark matter but instead must be made of four quarks.

Program advances in 2016

Building upon the historic bilateral U.S.-CERN agreement, signed in 2015, U.S. scientists continued their highly successful collaboration at the LHC and worked with CERN to advance the international neutrino program hosted at Fermilab.

The community moved rapidly toward a new era of neutrino physics. Development of the Long-Baseline Neutrino Facility (LBNF) and the Deep Underground Neutrino Experiment (DUNE) became truly international, providing a worldwide focus of scientific research hosted at Fermilab. A coordinated set of short-baseline neutrino experiments designed to answer perplexing questions raised by earlier experiments is proceeding.

Next-generation dark matter and dark energy experiments progressed. The selected dark matter experiments SuperCDMS-SNOLAB, LZ, and ADMX-G2 continued toward construction. The Dark Energy Spectroscopic Instrument (DESI) and the Large Synoptic Survey Telescope (LSST) construction projects continued on schedule.

Community efforts are underway to develop the next-generation cosmic microwave background facility, CMB-S4, which will probe in unique ways the physics of the very early Universe at energies far higher than can be achieved in earthbound accelerators and will also reveal neutrino properties.

Looking forward

All eyes are on the LHC as it continues higher-energy searches for new physics.

Eagerly anticipated new data from operating experiments will advance the understanding of the intertwined Science Drivers.

Japan is considering hosting the International Linear Collider (ILC), which would provide new opportunities for discovery beyond the LHC.

The vibrant U.S. particle theory community will continue to play key roles interpreting results from current experiments, motivating future experiments, and pursuing the deepest questions about the foundations of particle physics.

Building for Discovery

Strategic Plan for
U.S. Particle Physics
in the Global Context

usparticlephysics.org

Most used piece on Users DC trip, used in almost every meeting.

"P5 one pager was the only piece of material that I've seen staffers read and keep outside of the carpet 90% of the times" **DC trip feedback questionnaire**

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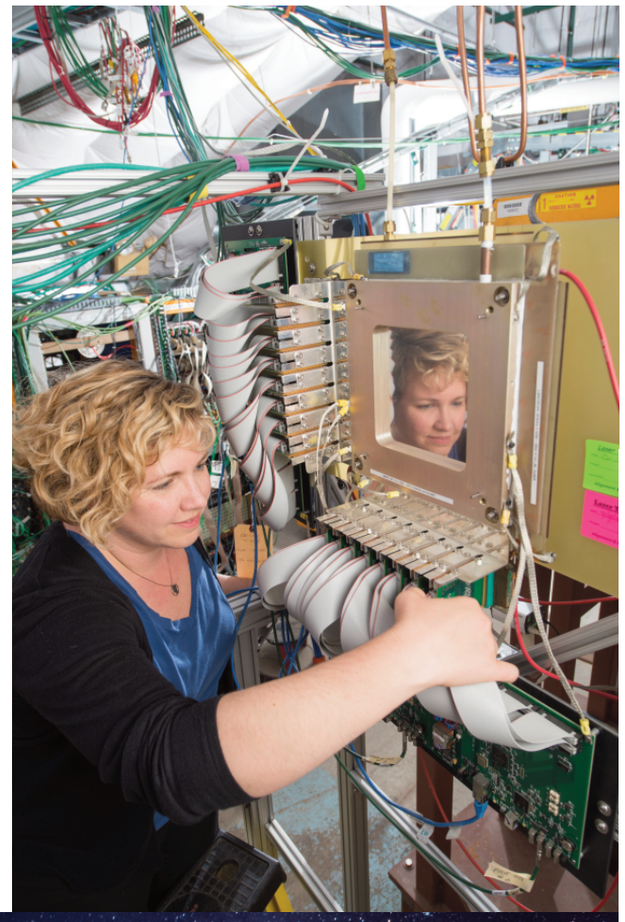
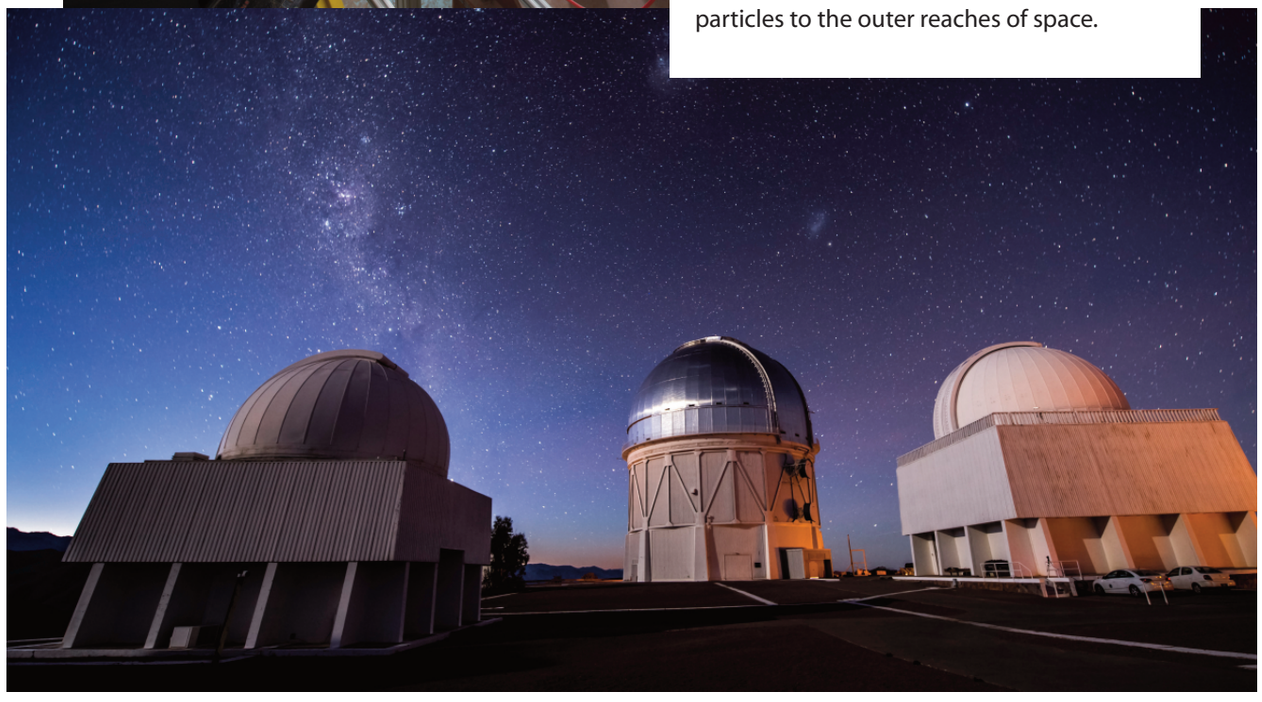




Particle Physics is Discovery Science

Exploring the Universe

The challenge of particle physics is to discover what our world is made of and how it works at the smallest scales. Particle physics explores the undiscovered universe from the tiniest particles to the outer reaches of space.

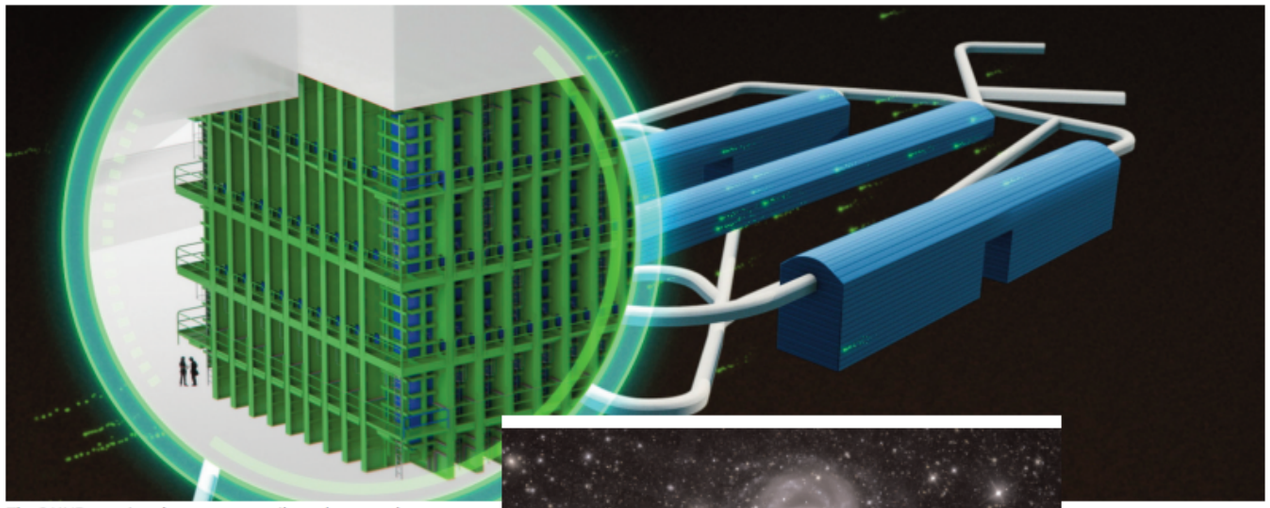
New ‘Introduction to Particle Physics’

- Overview of main questions in field
- Benefits to society - leads into other booklet
- Intro into P5 - leads into other booklet

Pictures chosen to represent all P5 projects and priorities

Provided a cheat sheet to trip attendees with more details on images and text

Center



The DUNE neutrino detectors one mile underground

Sky imagery from the Dark Energy Survey

Upgrading the CMS experiment

Building the LSST telescope (add dark matter?)

The Large Hadron Collider

Leading the World to New Discoveries

America's particle physics research program positions U.S. scientists to make the next generation of discoveries at home and abroad. **U.S. university and national laboratory researchers lead in the global search for answers to some of humankind's biggest questions:**

What are the fundamental forces of nature?
Particle physicists from the United States are leaders in the quest to understand the Higgs boson and to search for new particles and forces.

What are the building blocks of matter?
Ghostly and mysterious neutrinos seem to be a keystone in the interplay of elementary particles. U.S. scientists are leaders in using intense neutrino beams and sensitive detectors to uncover the role they play.

How did the universe develop into its present form?
Dark matter and dark energy make up 96% of the content of the universe and built the structure of galaxies that we see today. But what are dark matter and dark energy? U.S. scientists are leaders in Earth- and space-based experiments to answer these questions.

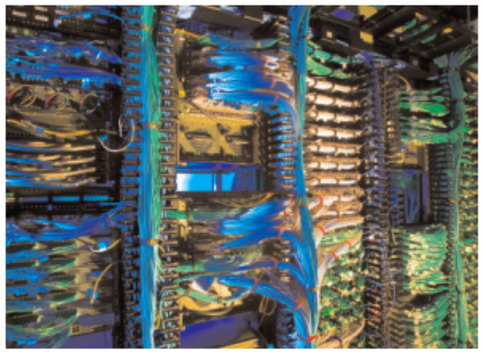
Particle Physics Propels U.S. Progress

The quest to better understand our world inspires and educates tens of thousands of students across the country every year and creates a globally competitive, highly trained workforce in the United States. Advanced research and development (R&D) in particle physics drives innovation that benefits other sciences and improves the nation's health, wealth, and security.

Here are just a few examples of the ways in which particle physics works for you.

- **Medicine:** Particle accelerators help develop more effective drugs to fight disease.
- **Security:** Particle physics detector technology enables advanced cargo screening.
- **Computing:** Particle physicists push the frontiers of big data analysis.
- **Manufacturing:** Radial tires are made stronger and lighter using particle accelerators.
- **STEM:** Research in particle physics inspires young people to engage with science.

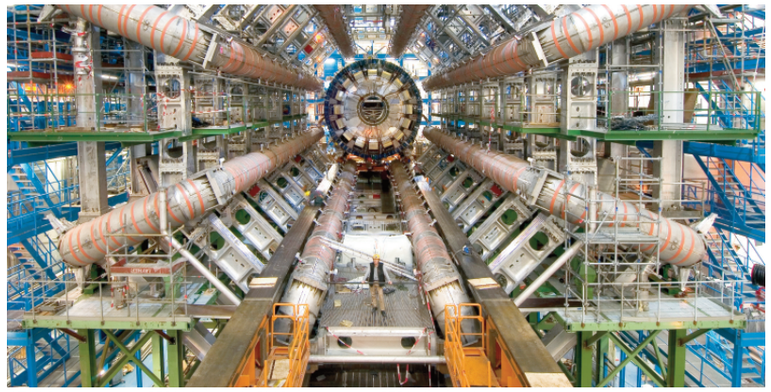
Students engage with physics concepts



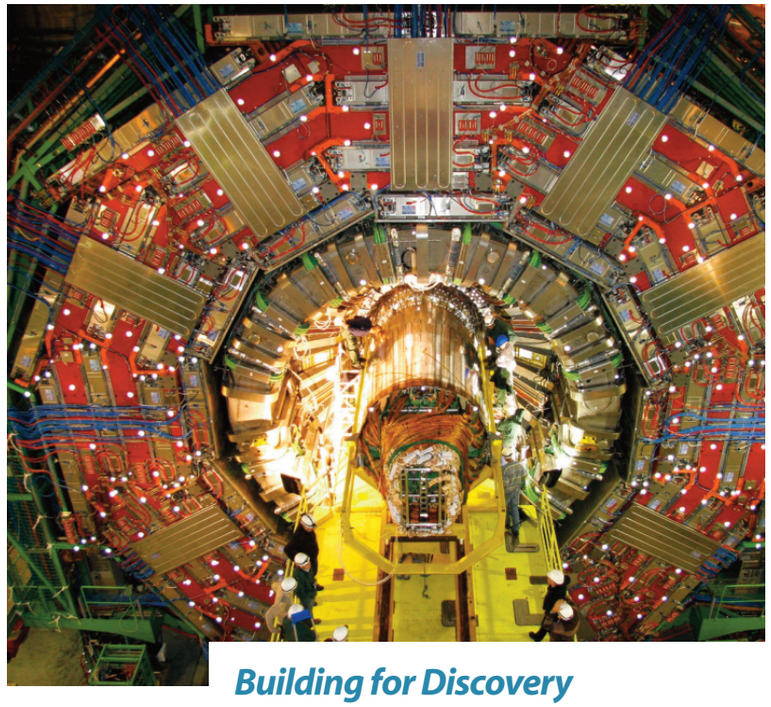
Particle physics challenges computing limits

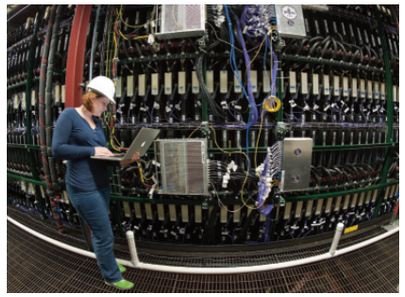
Particle accelerators improve medical implants and devices

Back



ATLAS detector at CERN (above); CMS detector at CERN (below).





NOvA neutrino experiment

Construction of the Mu2e detector

Developing the LZ dark matter detector

Images courtesy CERN, Fermilab, LSST, SLAC

Building for Discovery

The United States has entered a new era of discovery. The U.S. particle physics community is implementing its vision for the future, based on five intertwined science drivers that show great promise for discovery:

- Use the Higgs boson as a new tool for discovery
- Pursue the physics associated with neutrino mass
- Identify the new physics of dark matter
- Understand cosmic acceleration: dark energy and inflation
- Explore the unknown: new particles, interactions, and physical principles

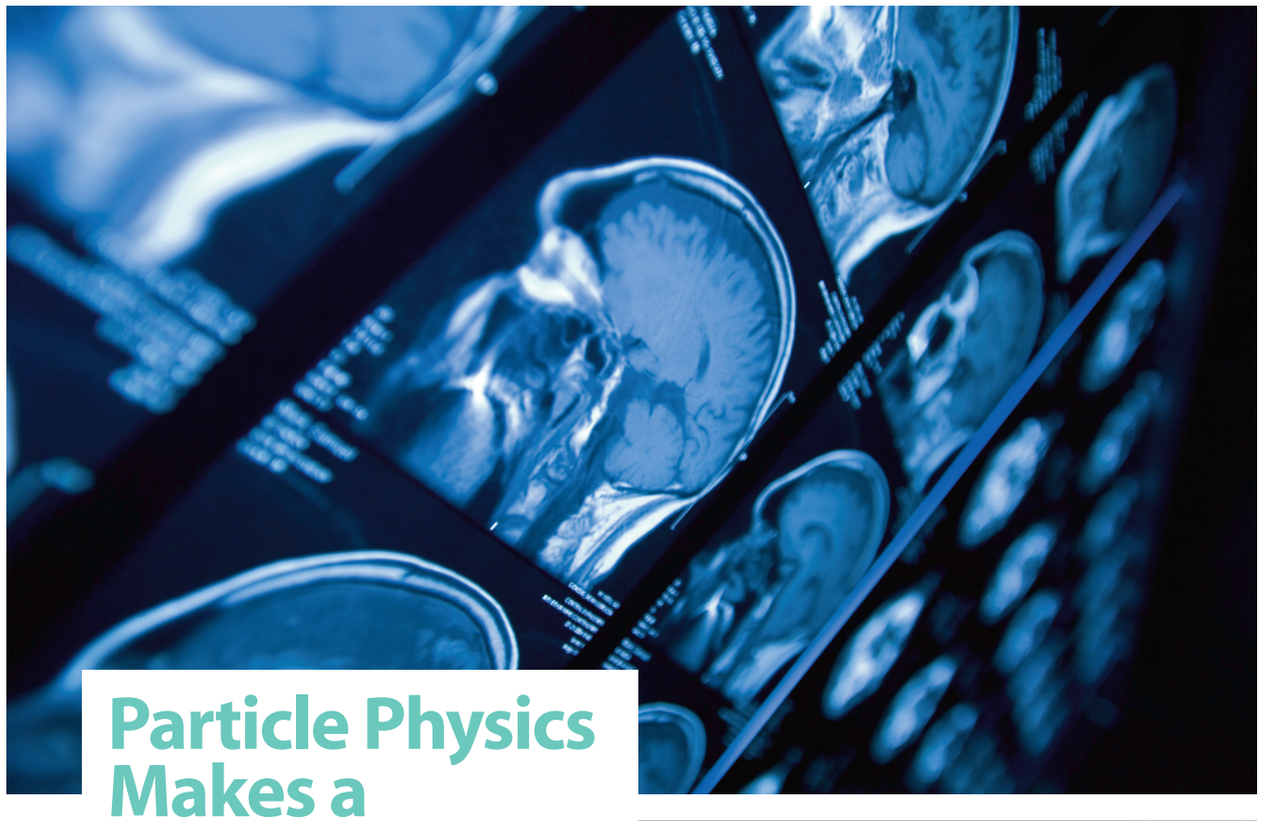
The report of the Particle Physics Project Prioritization Panel (P5) provides the long-term strategy and identifies the priorities for U.S. investments in particle physics that will enable discovery and maintain the U.S. position as a global leader.

Find all the details at usparticlephysics.org

"The professional folder was a big upgrade from last year! It had a good amount (not too little and not too much) of material."

DC trip feedback questionnaire

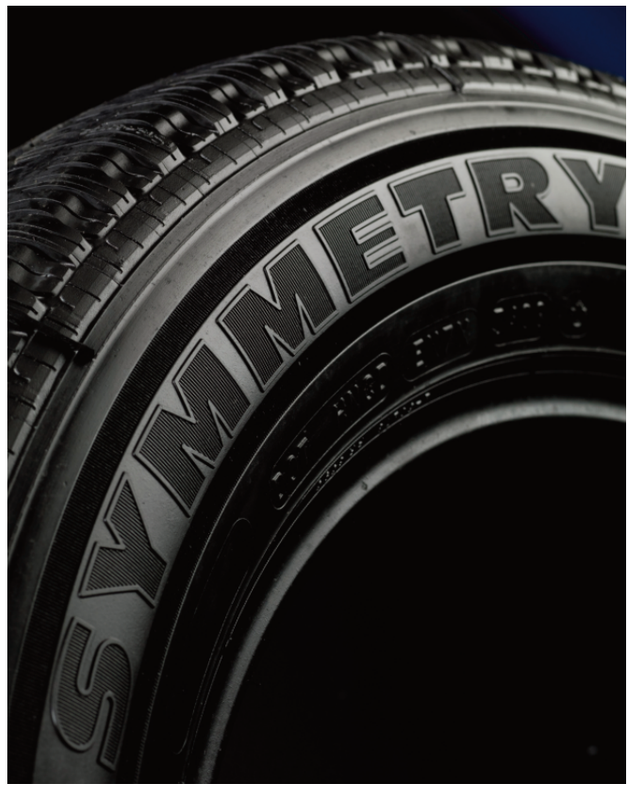
Front



Particle Physics Makes a Difference in Your Life

Global science, local impact

Particle physics is a global discovery science central to the modern innovation ecosystem. It drives national, regional, and local progress in science and industry. And it directly impacts your quality of life.



New ‘Benefits to society leaflet’

- Medicine
- Sensors and security
- Competing and simulation
- Manufacturing
- STEM

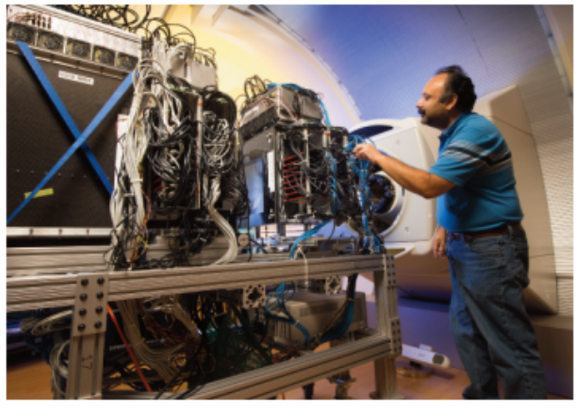
Provided a cheat sheet to trip attendees with more details on images and text

Center

Here are just a few examples of the ways particle physics works for you:

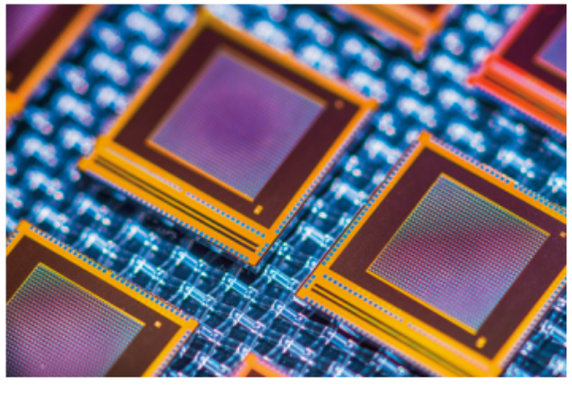
Medicine

- **The pharmaceutical industry** uses X-ray beams created by particle accelerators to develop more effective drugs to fight disease.
- Next-generation **medical imaging devices** are being powered by detectors developed for particle physics experiments.
- **Radiation treatment plans for cancer** are powered by software originally developed to model particle detectors, and treatments with gamma rays and protons are delivered using particle accelerator technology.



Sensors and security

- Custom silicon sensors developed for Large Hadron Collider experiments **drive industrial applications** including X-ray and medical imaging, testing of new materials, and radiation dosimetry aboard the International Space Station.
- Particle physics detector technology **improves homeland security** by enabling advanced cargo screening and new techniques for monitoring the contents of nuclear reactor cores.
- **Chemistry, biology, and materials science** researchers use sensors developed for particle physics in cameras that collect signals from visible and infrared light and from X-rays.



Computing and simulation

- **Tomorrow's computers** will be built from materials now being characterized using intense beams of X-rays and neutrons from particle accelerators.
- **The World Wide Web** was first developed by particle physicists to share information quickly and effectively around the world. Particle physicists continue to push the frontiers of big data analysis with global grids and cloud computing.
- **Radiation exposure for spacecraft** is simulated using software originally developed to model particle detectors.
- **Atomic and nuclear physics advances** benefit from precise mathematical techniques developed by particle physicists, now used to predict new materials and molecules.

Manufacturing

- **Precise, customized medical implants** are manufactured using electron beams from particle accelerators.
- **The food industry** has used particle accelerators for decades to produce the sturdy, heat-shrinkable film that turkeys, fruits, vegetables, and baked goods come wrapped in.
- **Ink curing companies** use particle accelerators as an environmentally friendly way to produce the colorful packaging on many grocery store items, including cereal boxes.

Back

Training the next generation of STEM leaders

- **The high-tech global economy** benefits from students, scientists, engineers, and technicians trained in the cutting-edge science of particle physics.
- **Particle physics research inspires** young people to engage with science.
- **The U.S. Particle Accelerator School** fills a critical need for training highly skilled personnel to operate the world's 30,000 industrial and medical particle accelerators.
- **More than 100 U.S. universities and five national laboratories** give students hands-on learning experiences every year. Particle physics education programs teach students the principles of science, math, computing, and engineering.

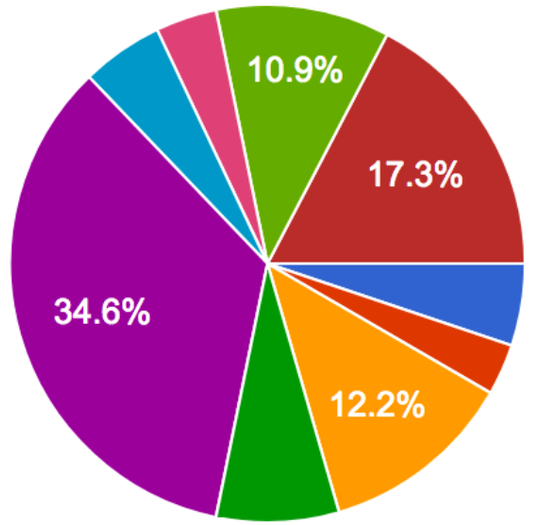
For more examples of particle physics in society:
www.symmetrymagazine.org/applied

Images courtesy *Fermilab, NASA, Shutterstock*

2017 DC trip feedback form

Things they most interested in

156 responses



5%	Grants info
3%	Procurements info
12%	STEM
8%	Medical Benefits
35%	Science
5%	Security Benefits
4%	Manufacturing Benefits
11%	P5
17%	Other

*`they' refers to staffers/ congresspeople met with

Additional Material brought on trip

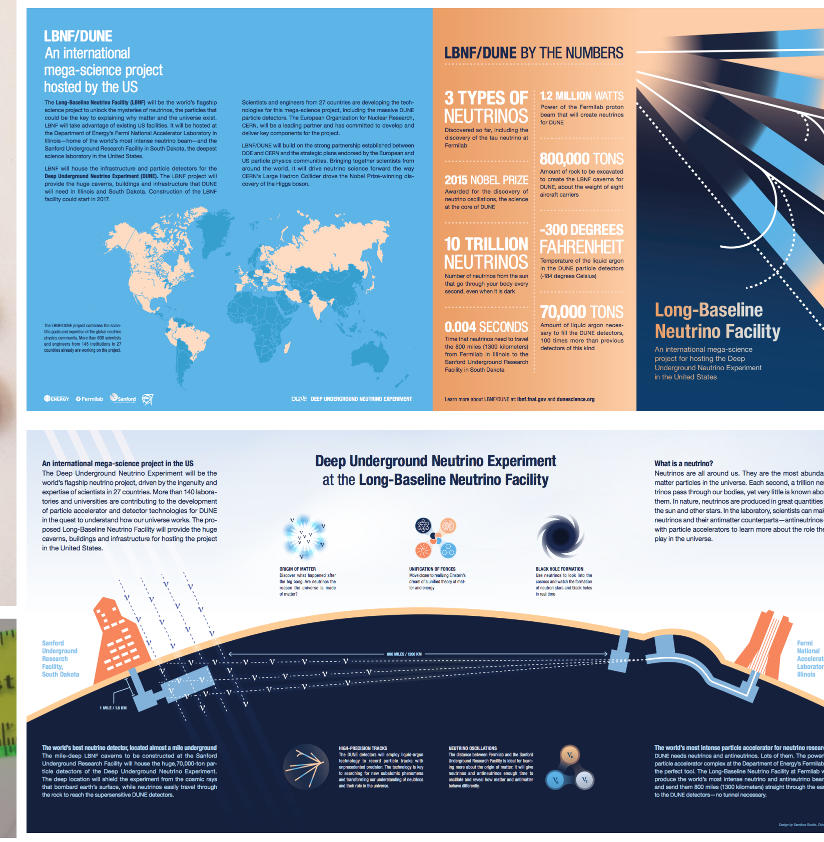
- Pamphlet on DUNE
- 5 symmetry articles as chosen by the user groups
    - US LHC leadership
    - DUNE
    - Deep learning
    - CERN and US agreement
    - Magnets
- Tchotchkes
    - FNAL wave-length shifting ruler
    - Particle zoo buttons

" I really liked the buttons"

"you guys bring the best stuff"

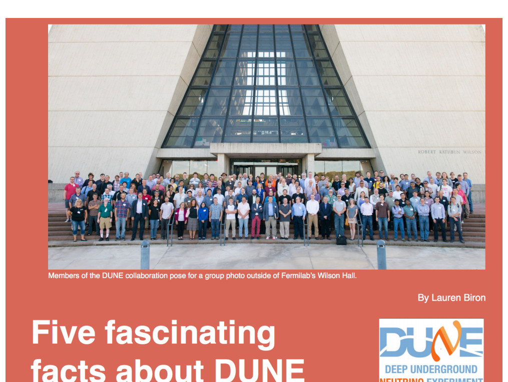
buttons

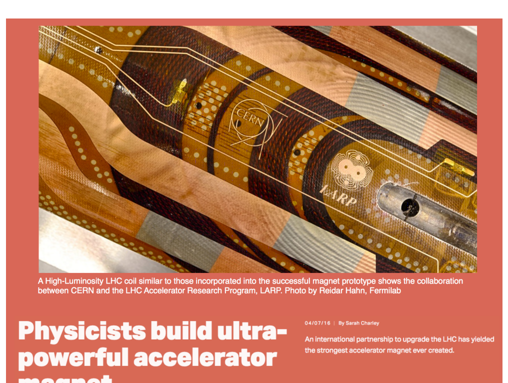
Dune pamphlet

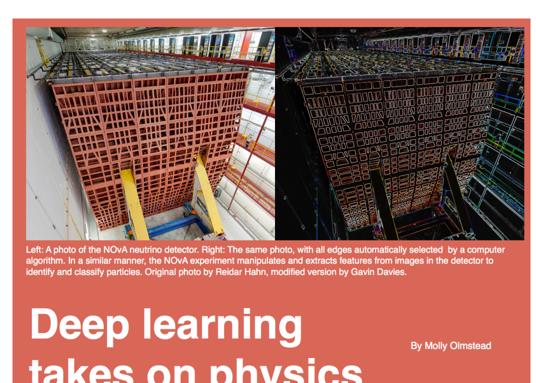


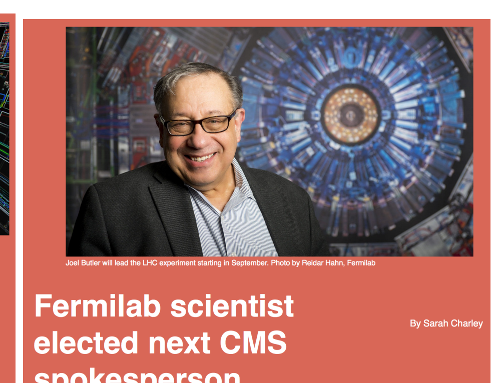
ruler

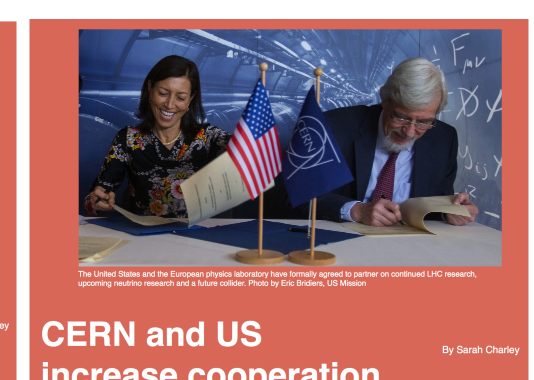
reformatted symmetry articles











Additional Material brought on trip

- Pamphlets from UEC, USULA, USLO

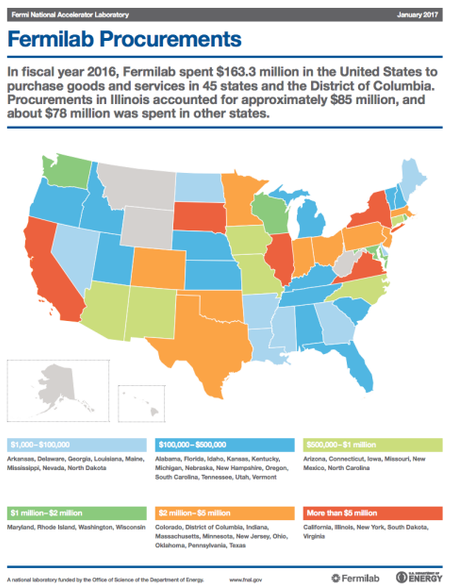
US LHC

USLUA

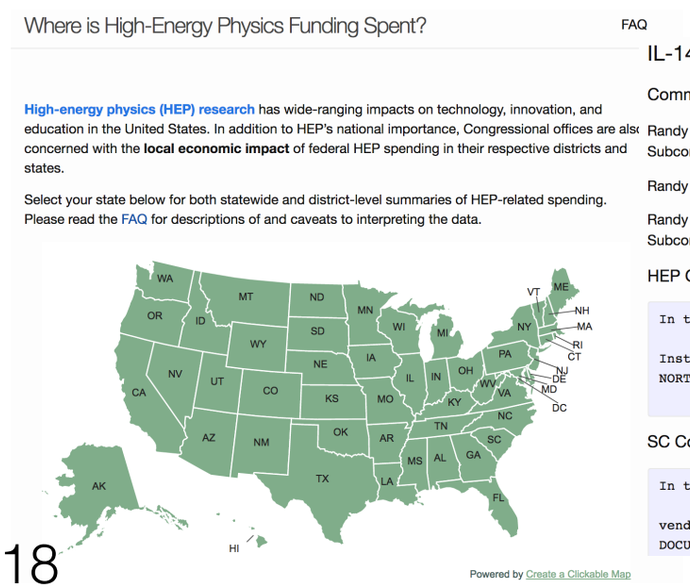
SLAC fact sheet

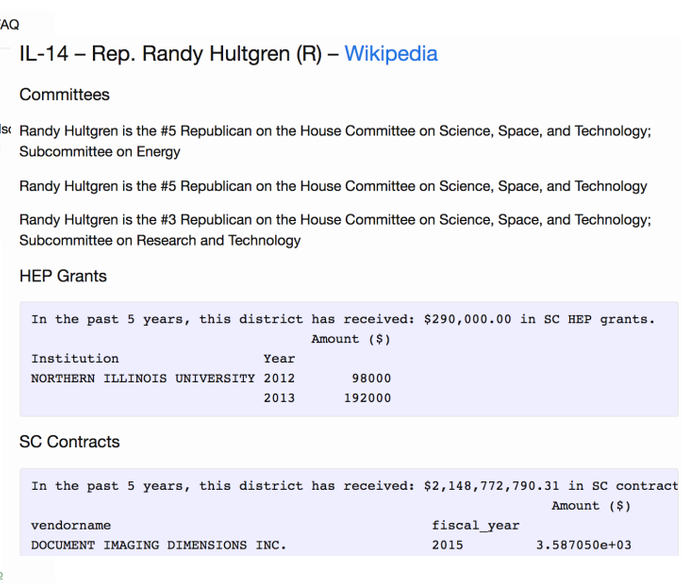
FNAL fact sheet

- Procurement and grant information: Provides a way to show direct impact on a district/state
  - FNAL provides list of all procurements separated by state and zip code
  - Stanford PhD student M. Baumer's produced new HEP spending page making grant info per district easy to get

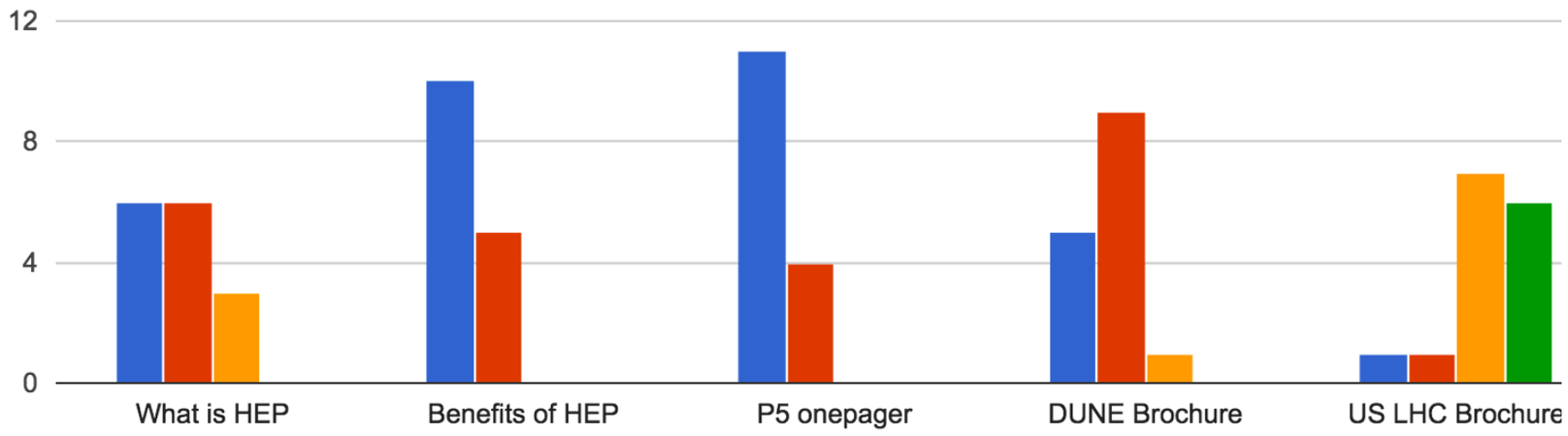


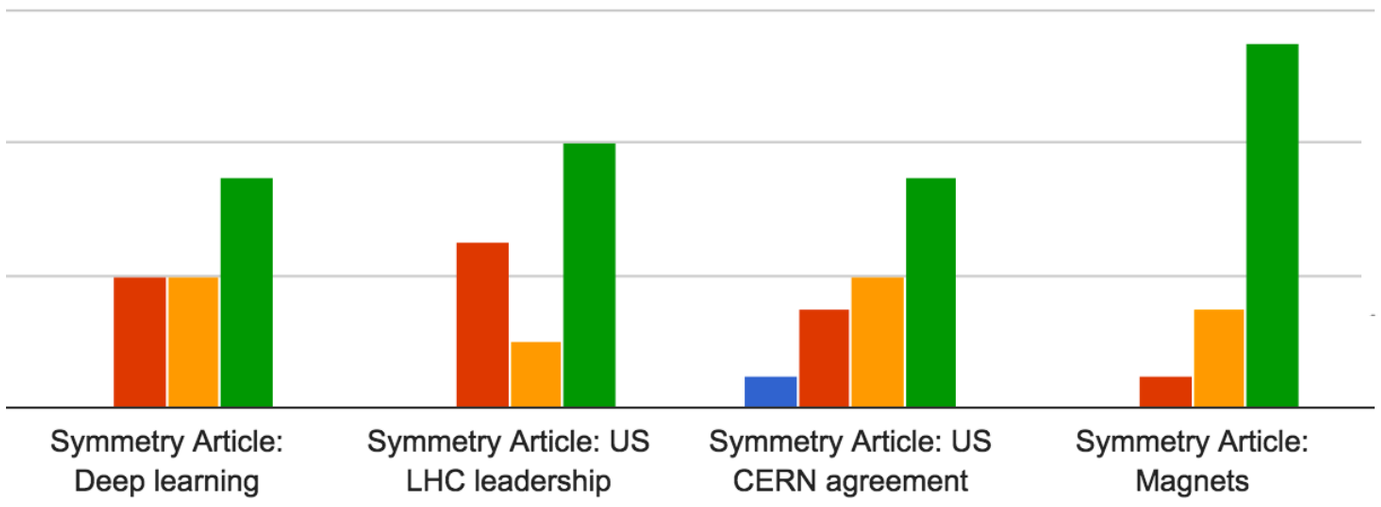
"Breakdown .. by district … be helpful to have as resource again next year"

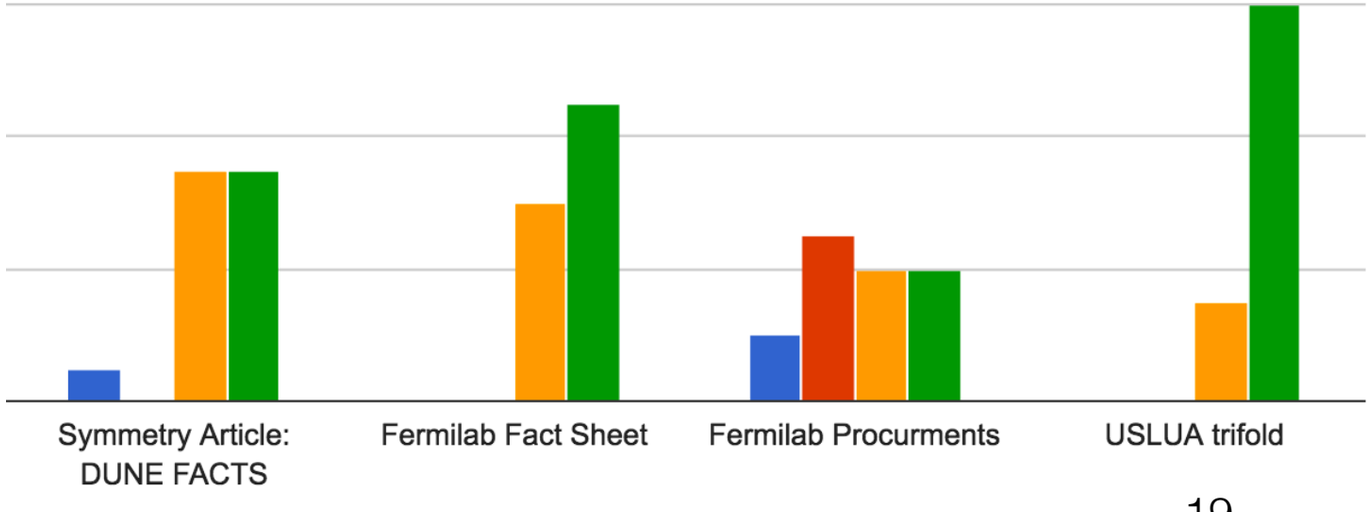




What of material in the packet did you use most?







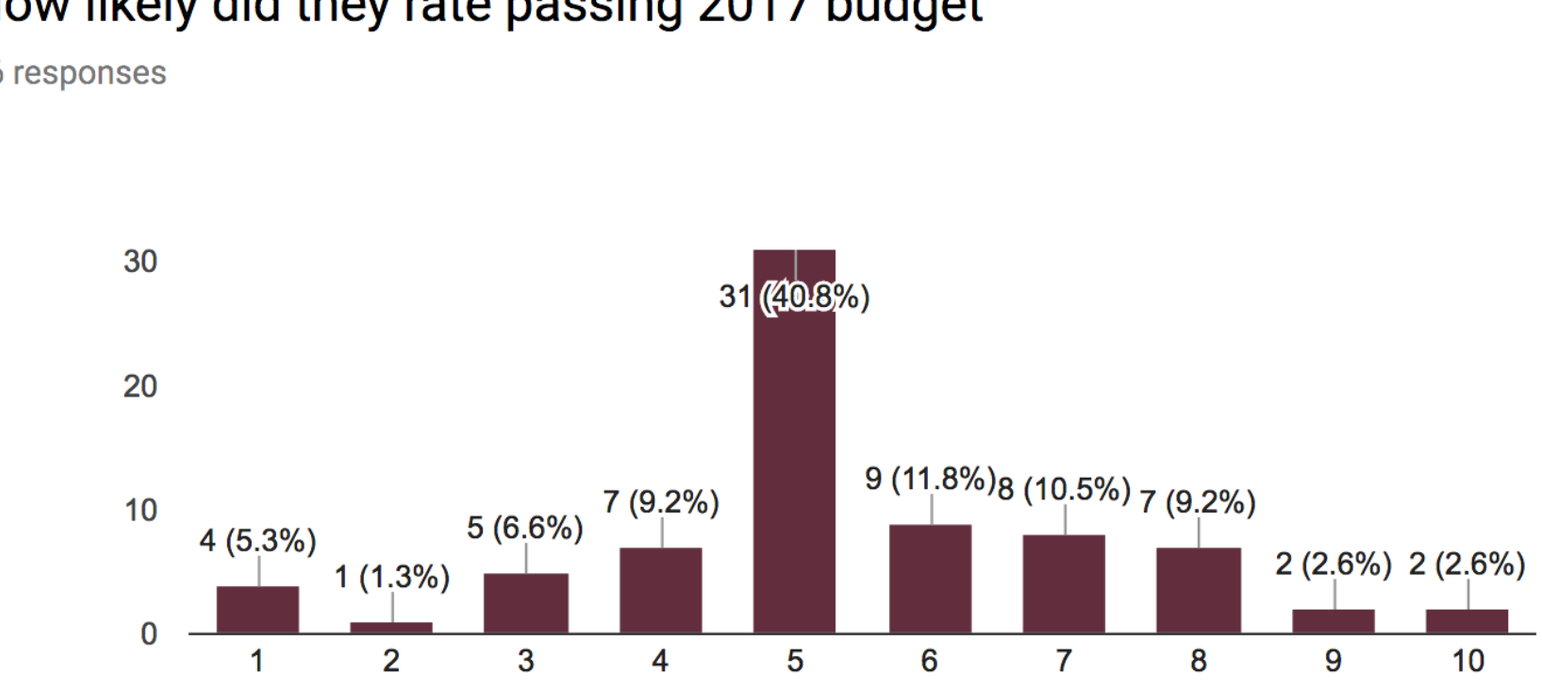
2017 DC trip - ‘Ask’

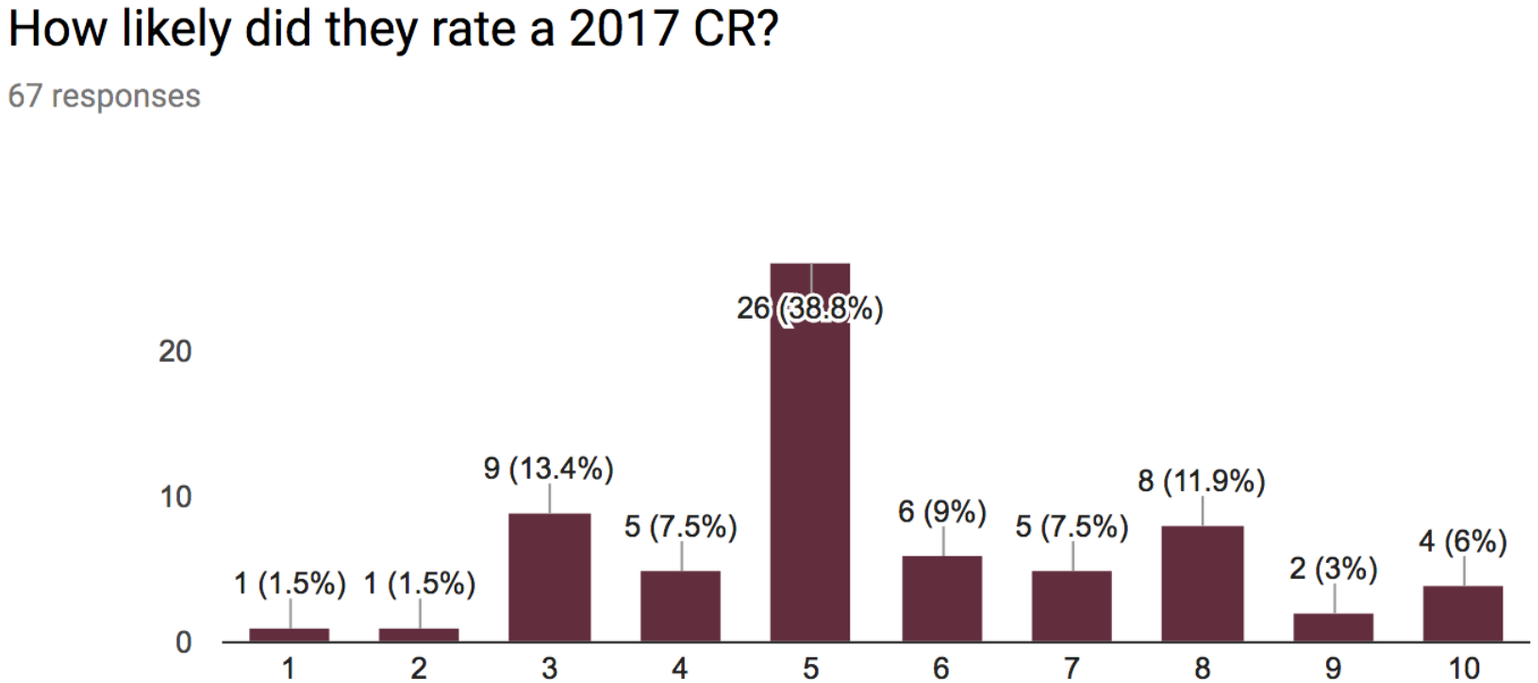
- The 2017“Ask” was not provided as a written leave-behind, as had been done in pervious years, but was communicated verbally.
- **The “Ask” of Congress was simple and focused: PASS THE FY2017 BUDGET.**
  - The Congressionally proposed FY2017 budget was favorable for HEP and offered strong support for the P5
  - Trip attendees were ask to encourage Congress to pass specifically the Energy & Water Appropriations bill and generally the budget for FY2017.

Reminder 2016 Ask was: Please support funding for HEP in FY 2017 by sponsoring:
- $833M for HEO within the DOE Office of Science in the FY 2017 E&W Appropriations bill
- $295M for Physics within the Directorate of Mathematical and Physical Sciences of the NSF in the FY 2017 CJS and Related Agencies Appropriations bill

2017 DC trip - ‘Ask’

Mixed opinion at time of the users trip on 2017 appropriations



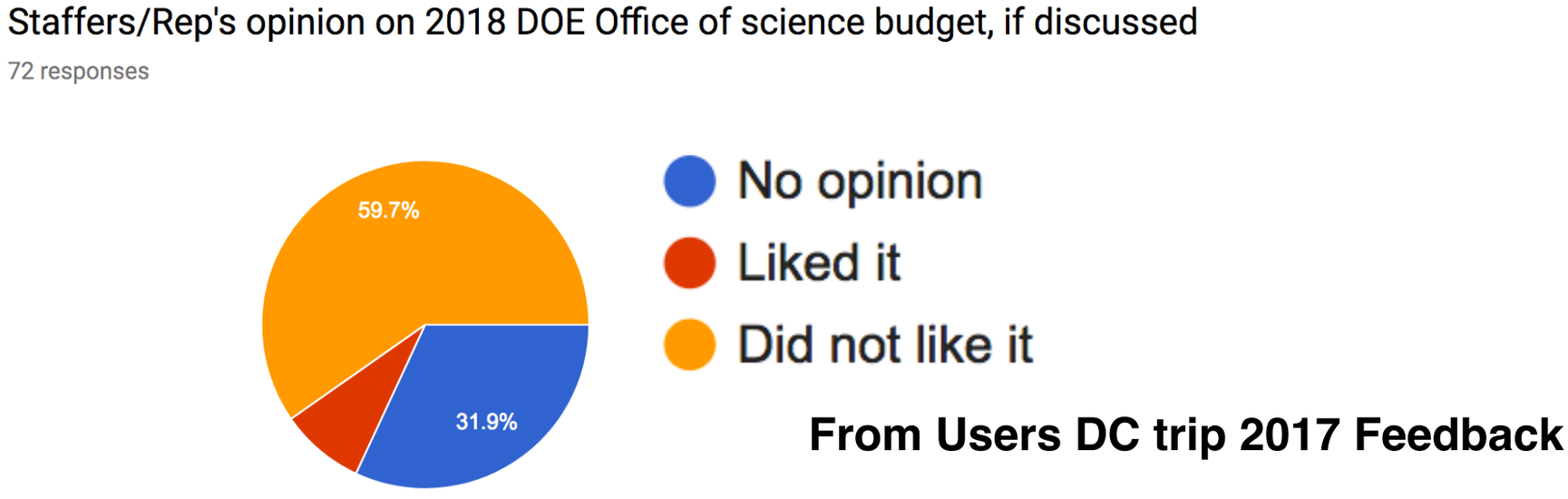


*`they’ refers to staffers/ congresspeople met with

From users DC trip 2017 feedback

2017 DC trip - ‘Ask’

- The Presidents blueprint for his FY2018 budget ‘the Skinny budget’ was out at the time of the trip.
- No part of the ASK was focused on the 2018 appropriations but we provided guidance in case trip attendees were asked to comment on it. The guidance was as follows:
  - The President’s blueprint for his FY2018 budget proposes steep reductions to the DOE Office of Science (almost 18%).
  - The President’s budget blueprint for FY2018 did not provide sufficient detail for any of us to comment on how it addresses the Office of High Energy Physics or even NSF.
  - Collectively, we are all concerned about the impact of such cuts to the overall Office of Science. Beyond this we advised trip attendees to please not comment on the FY2018 proposal



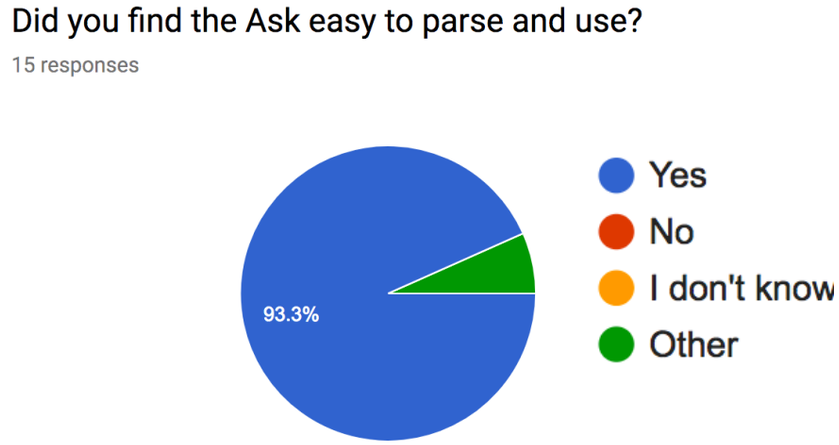
From Users DC trip 2017 Feedback

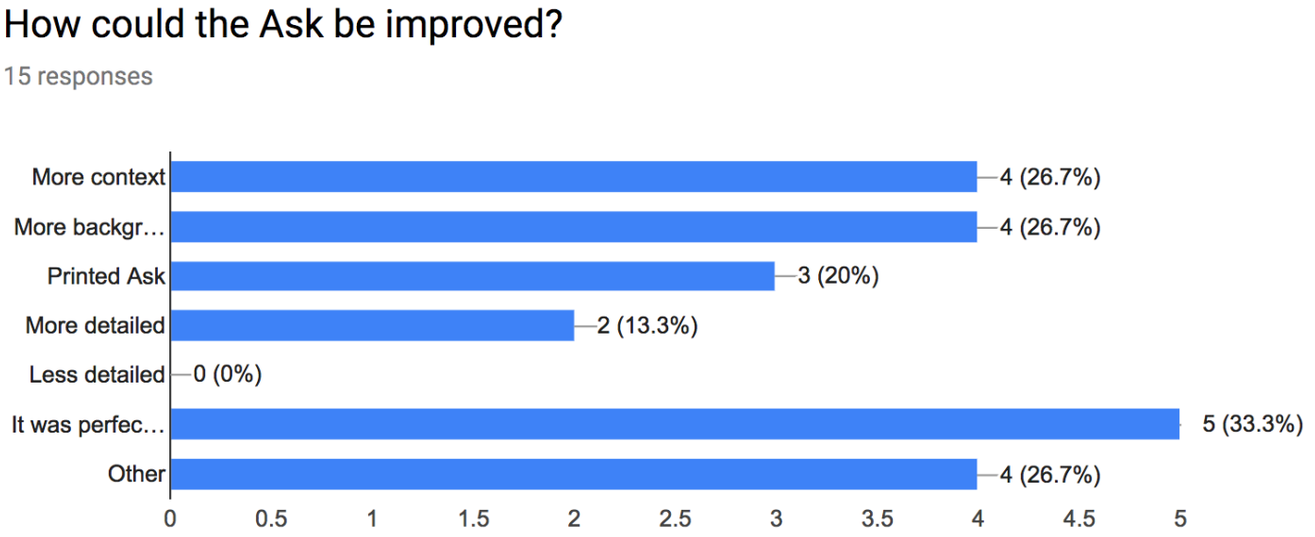
DOE/NSF/OSTP/OMB visits

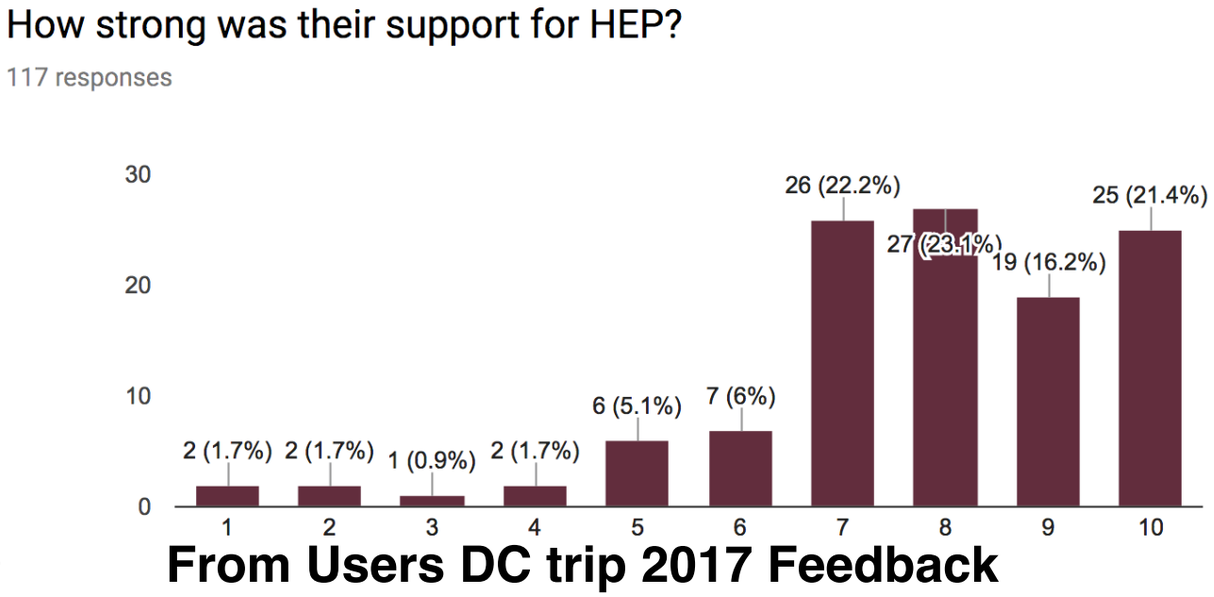
- In addition to the congressional district and senate visits we also arrange visit with
  - DOE (both Independence Ave and Germantown)
  - NSF
  - OMB/OSTP (joint meeting, location changes between office buildings)
- Discuss with them the mood on the Hill and any information they have to pass along

Users trip followup

- We ask attendees to follow up with all offices visited thanking them for their time and support
- Building these connections is very important for future visits and year around efforts
  - Use these contacts to reach out when needed, for example for recent Senate Dear Colleague Letters
- Collect feedback in two forms
  1. On the trip planning, material and logistics
  2. ‘Trip reports’ on how congressional meetings went







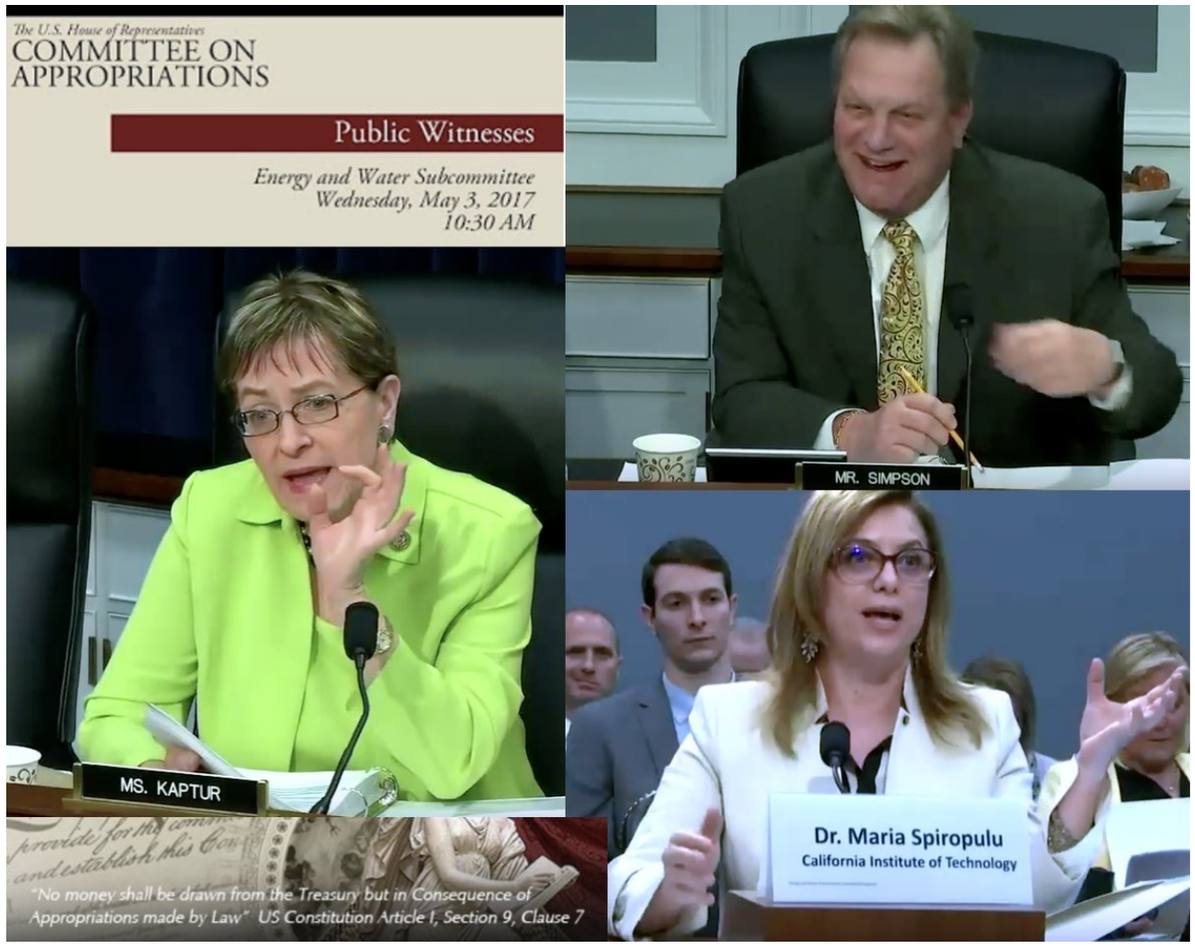
From Users DC trip 2017 Feedback

Maria Spiropulu's congressional testimony

- Maria Spiropulu (Caltech) was invited to testify before the House Appropriations Energy and Water Subcommittee on HEP priorities, May 3, 2017

- Maria highlighted the importance of the P5 plan, neutrino physics and LBNF/ DUNE, dark energy/matter experiment program, and U.S. support of the LHC

- Maria also described the contributions of high-energy physics to technical innovation and a well-trained scientific workforce.



click for link to video (1:47)

2017 Budget passed

- On May 1st 2017 Y17 Omnibus Bill released by House and Senate Appropriators
- DOE HEP fared quite well within Office of Science: **HEP received $825 million, $8 million more than the PBR**
  - FY16 enacted ($795M), FY17 Pres Proposed ($818M, +2.9%), FY17 Omnibus ($825M, +3.8%)
- The HEP mark is between the original House and Senate marks of $823M and $833M respectively.
- **Of VERY significant note, HEP was the only area of Office of Science to fare better in the Omnibus than it did in the President's request.**

Reminder 2016 Ask was: Please support funding for HEP in FY 2017 by sponsoring:
- $833M for HEO within the DOE Office of Science in the FY 2017 E&W Appropriations bill
- $295M for Physics within the Directorate of Mathematical and Physical Sciences of the NSF in the FY 2017 CJS and Related Agencies Appropriations bill

2018 Appropriations Community Letter

- A letter written by the FNAL, SLAC and US LHC users group and DPF Executive Committees was finalized and sent out to House and Senate Energy and Water Appropriations Committees last week.
  - House: Chairman Mike Simpson and Ranking Member Marcy Kaptur on Appropriations Subcommittee on Energy and Water Development (https://goo.gl/aOrxMR)
  - Senate: Chairman Lamar Alexander and Ranking Member Dianne Feinstein on Appropriations Subcommittee on Energy and Water Development (https://goo.gl/r6NKkX)

"As you prepare a fiscal year 2018 Energy and Water Development appropriations bill, we strongly urge you to provide $868 million for High Energy Physics in FY2018. This funding level is vital to maintain U.S. leadership in particle physics, move forward with world-class scientific projects, and meet scheduled commitments to our international partners.

We ask that the $868 million include support for construction of the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment (LBNF/DUNE) at Fermilab, and for the upgraded High Luminosity Large Hadron Collider (HL-LHC) accelerator and experiments at CERN. "

Letter to be made available to community

Future planning for 2018 Users Trip

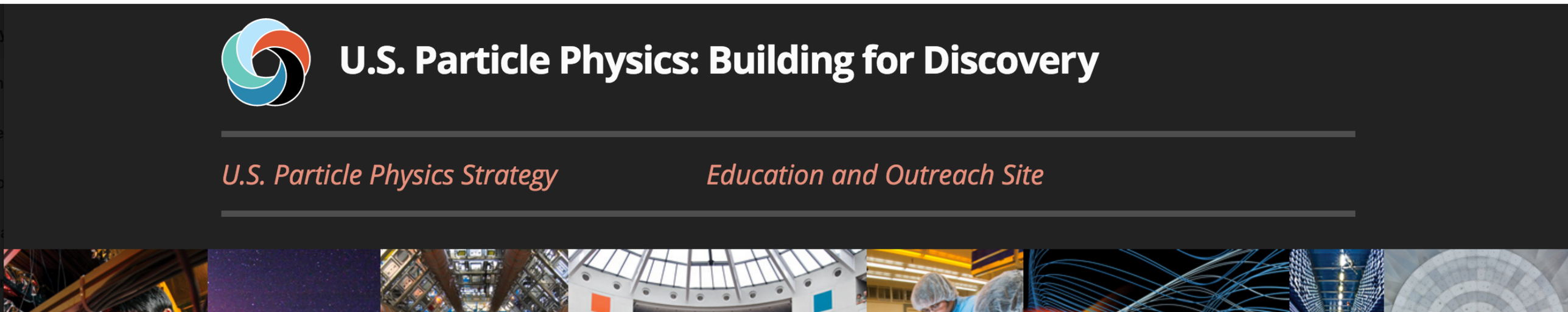
- Trip is normally scheduled in March/April to have maximum impact on the Appropriations process, but this is not a fixed date.
- Schedule for Appropriations unclear at this time. Trip can be timed for maximum impact
  - A second smaller 2017 trip has also been floated as an possibility
- We are in a good place for next years users DC trip, material produced should not need substantial changes
- Implementing improvements based on feedback received
  - Producing scripted example meetings and scenarios
  - Easier access to grant and procurement information per district
  - Bring a more balanced packet. Additional material in packet was focused largely on DOE projects, will bring more on NSF projects and astrophysics
  - Make tweaks to our congressional office matching algorithm. Modifying weights of personal connections and pre-meetings with that district.
  - Working to implement modern media into meetings, for example DUNE video and MicroBooNE VR display

Wider HEP Communication Efforts Going Forward

- Building and improving our community communication tools will be important moving forward
  - Working on getting available material out and known to the community
    - http://www.usparticlephysics.org/
  - Working on implementing year round efforts involving the whole community
- Determine the best way of communicating information with the whole community, possibly through DPF
- Build and provide the community the tools needed
  - Information on best times and ways to get involved
  - Information how to communicate about HEP to the general public, for example providing scenarios/talking points.
  - Provide tools that enables access to the information and tools that the users groups have put together to the wider community

Conclusions

- 2017 Users DC trip was very successful visiting 70% of the House and Senate
- The new community communication material produced was a community joint effort.
- This material was very well received and is available on the US Particle Physics website
- A Community Letter was sent to the Appropriations Subcommittee on Energy and Water Development, June 2017, urging for $868 million for High Energy Physics in the 2018 Energy and Water Development appropriations bill.
- The users groups are working to improve the 2018 Users DC trip and on their plan to make an impact on 2018 Appropriations
- Building and improving our community communication tools will be important moving forward



Backup

Community 2018 Appropriations House Letter

June 2, 2017

Chairman Mike Simpson
Subcommittee on Energy and Water Development
Committee on Appropriations
2362-B Rayburn House Office Building
Washington, D.C. 20515

Ranking Member Marcy Kaptur
Subcommittee on Energy and Water Development
Committee on Appropriations
1016 Longworth House Office
Washington, D.C. 20515

Dear Chairman Simpson and Ranking Member Kaptur:

We are writing on behalf of the U.S. community of approximately 6,000 scientists, engineers and students from 160 universities and DOE national labs that conducts research on high energy physics. We thank you for your continued support for the High Energy Physics (HEP) program in the DOE Office of Science. As you prepare a fiscal year 2018 Energy and Water Development appropriations bill, we strongly urge you to provide $868 million for High Energy Physics in FY2018. This funding level is vital to maintain U.S. leadership in particle physics, move forward with world-class scientific projects, and meet scheduled commitments to our international partners.

We ask that the $868 million include support for construction of the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment (LBNF/DUNE) at Fermilab, and for the upgraded High Luminosity Large Hadron Collider (HL-LHC) accelerator and experiments at CERN. These are the two highest priority large projects, and critical to maintain U.S. leadership in particle physics over the next several decades. LBNF/DUNE is an international neutrino facility hosted in the U.S. This level of funding is needed to enable prototype detector construction with our international partners as well as to excavate underground caverns that will house the final neutrino detectors. Funding for the HL-LHC enables leading U.S. responsibilities including essential upgrades to the accelerator and experiments, to empower the next round of discoveries at the highest energies.

In addition to these major projects, the $868 million funding level will advance and support world-leading undertakings including the next generation dark matter and dark energy experiments which are critical to understanding what makes up our universe and what is causing its expansion, as well as particle physics and accelerator research at universities and DOE national labs across the U.S. Funding at this level would continue to drive forward the stream of innovations that result as we push the boundaries of technology development, from superconducting magnets, to accelerator-based medical treatment and biomedical research, to advanced scientific computing; innovations whose benefits improve the quality of our daily lives.

Our priorities are based on the 10-year strategic plan "Building for Discovery", also known as P5, that was developed by the High Energy Physics community in close consultation with our funding agencies. Our community has come together behind the P5 plan, its compelling comprehensive scientific vision, and the tough decisions made to fit the research program within the available funding envelope. Our community continues to achieve its groundbreaking scientific milestones, and has an excellent track record of delivering projects on time and on budget. Since the implementation of the P5 strategic plan in 2014, we have explored the nature of the Higgs boson and new states of four-quark matter with LHC experiments that have outperformed expectations, delivered the world's highest intensity neutrino beam, set the world's best constraints on dark matter, constructed a successful prototype of the strongest accelerator magnet ever built, and demonstrated multi-stage acceleration in laser-driven plasmas.

The President's budget request for FY2018 of $672.7M, an 18.5% cut below the FY2017 enacted level, falls far short of the funding needed for a healthy HEP program, and further short of a world-leading program. The PBR, if enacted, would have dire, long-term consequences both for our highest priority projects and for the field as a whole. The P5 report warned of the impact of such budgets on the field. Research would be severely compromised through reductions in scientific staff, failure to attract the best minds, and major cuts to operations of user facilities that support hundreds of scientists and students. Projects for future research, such as LBNF/DUNE, would be substantially delayed, and costs would increase. Existing international commitments, such as for the HL-LHC, would be jeopardized, and international partnerships that are fundamental to particle physics as a global field would be damaged, with lasting consequences. Training of the science and technology workforce would be dramatically reduced, and the inspiration and attraction to the public and the future workforce would be compromised.

Robust funding, at the $ 868M level, is necessary to build on recent progress. We are grateful for your continued leadership in funding this important field of science.

Professor Marcela Carena
Chair Division of Particles and Fields of the American Physical Society
Enrico Fermi Institute and Kavli Institute for Cosmological Physics
Department of Physics at The University of Chicago
5460 Ellis Ave.
Chicago, IL 60637

Professor Edward Kearns
Chair Fermilab Users Executive Committee
Boston University Physics Department
590 Commonwealth Ave.
Boston, MA 02215

Professor Harvey B Newman
Chair US LHC Users Executive Committee
Charles C. Lauritsen Laboratory of High Energy Physics
Division of Physics, Mathematics and Astronomy
California Institute of Technology
1200 East California Boulevard
Pasadena, CA 91125

Dr. Nicola Omodei
Chair SLAC Users Organization Executive Committee
Hansen Experimental Physics Laboratory and
Kavli Institute for Particle Astrophysics and Cosmology
Stanford University
Stanford, CA 94035

https://goo.gl/aOrxMR

Community 2018 Appropriations Senate Letter

May 31st, 2017

Chairman Lamar Alexander
Subcommittee on Energy and Water Development
Committee on Appropriations
186 Dirksen Senate Office Building
Washington, D.C. 20510

Ranking Member Dianne Feinstein
Subcommittee on Energy and Water Development
Committee on Appropriations
188 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairman Alexander and Ranking Member Feinstein:

We are writing on behalf of the U.S. community of approximately 6,000 scientists, engineers and students from 160 universities and DOE national labs that conducts research on high energy physics. We thank you for your continued support for the High Energy Physics (HEP) program in the DOE Office of Science. We are grateful for the letters you have already sent to President Trump supporting the DOE basic research programs. As you prepare a fiscal year 2018 Energy and Water Development appropriations bill, we strongly urge you to provide $868 million for High Energy Physics in FY2018. This funding level is vital to maintain U.S. leadership in particle physics, move forward with world-class scientific projects, and meet scheduled commitments to our international partners.

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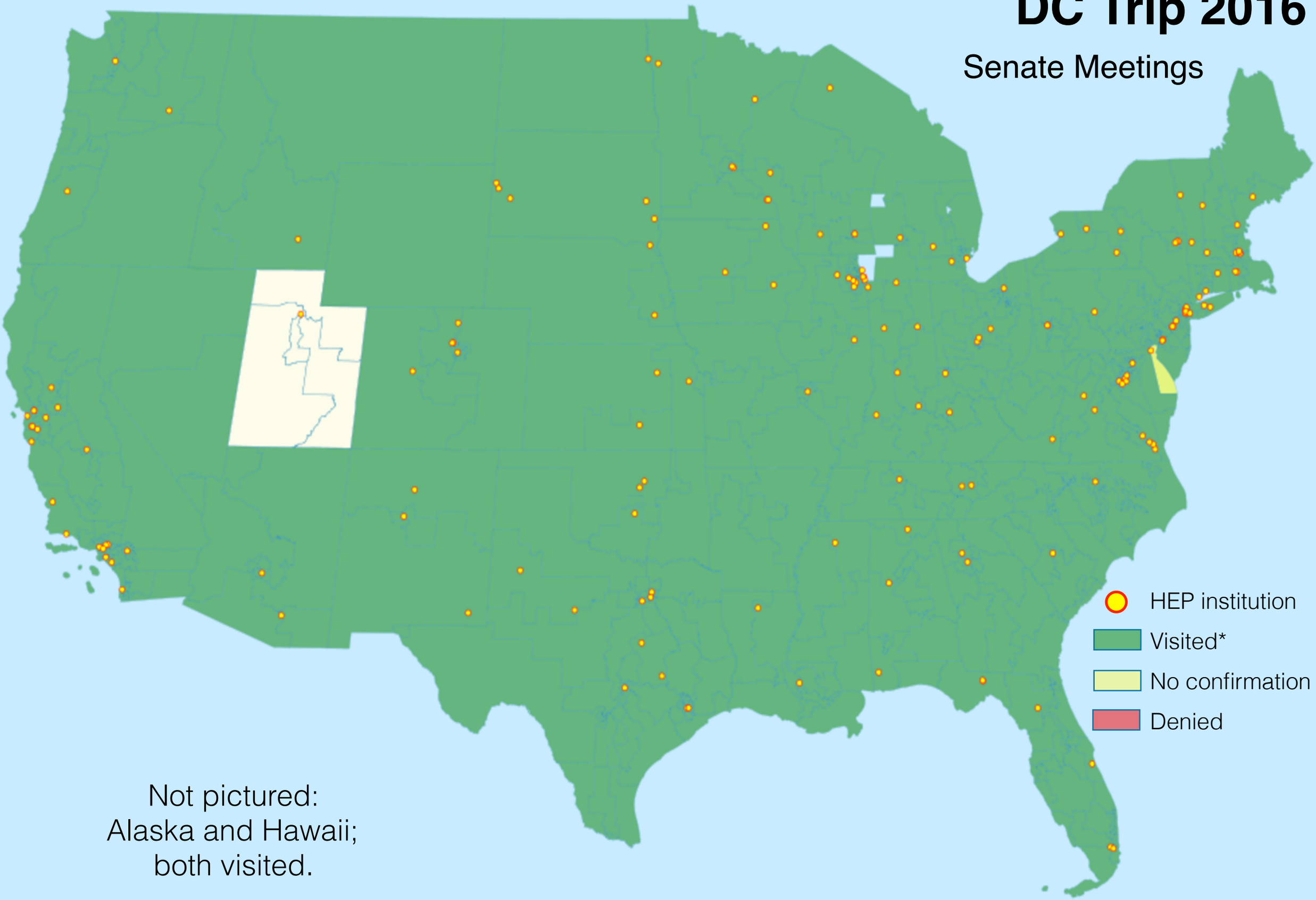
DC Trip 2016

Senate Meetings

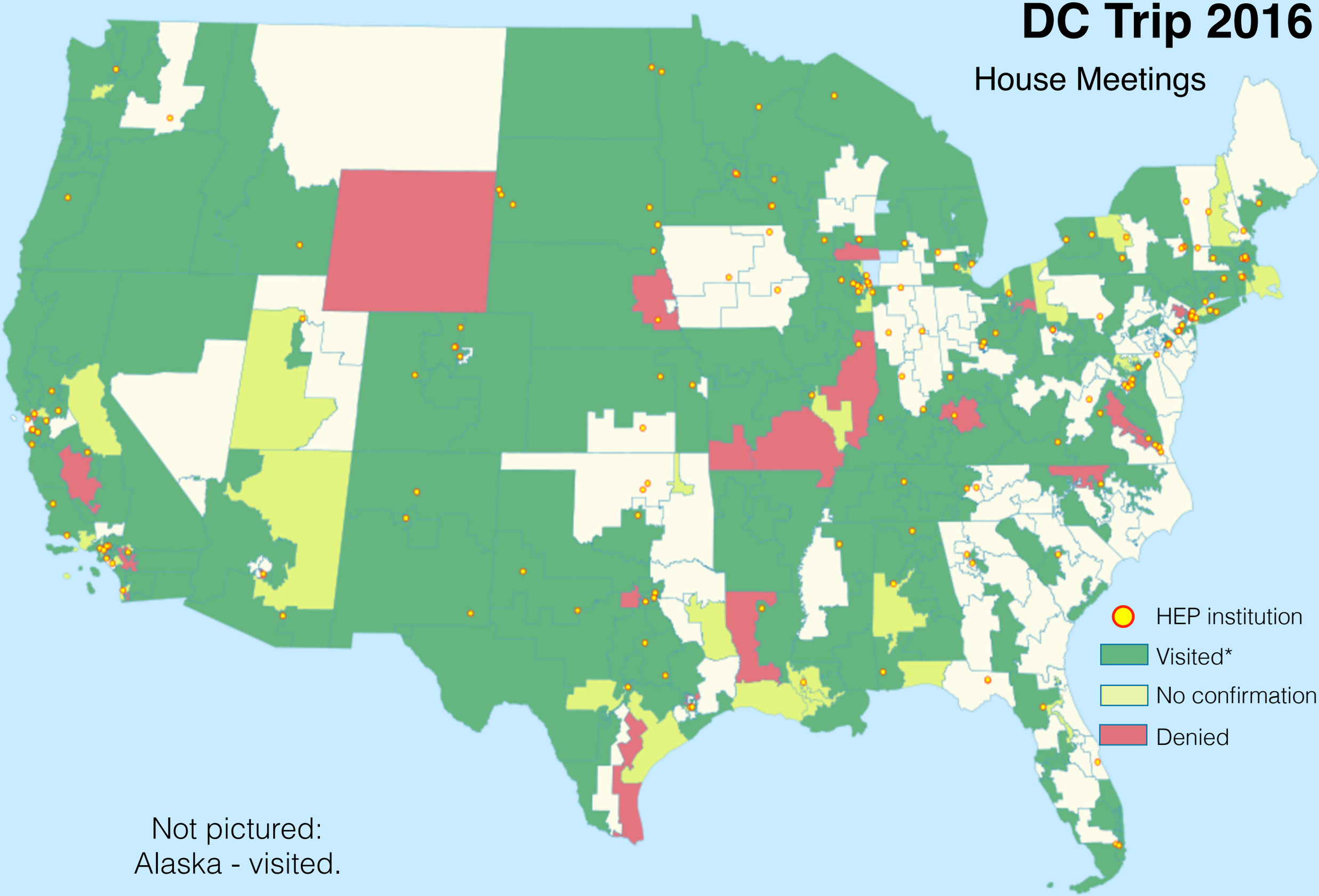


Not pictured:
Alaska and Hawaii;
both visited.

* one *or* two Senators

DC Trip 2016

House Meetings



Not pictured:
Alaska - visited.

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