

**Community Advisory Council
May 14, 2026
Action Items/Notes**

Final

Note: This was a hybrid meeting, held virtually through Zoom and in-person in Berkner, Bldg. 488, Room B. A video recording of the Zoom meeting is available.

These notes are in the following order:

1. Attendance
2. Correspondence and handouts
3. Administrative items
4. Scientific Presentation
5. Environmental Presentation
6. Community Comment
7. Agenda Setting

1. Attendance

Members/Alternates Present: See attendance sheet at the end of the notes

Others Present: B. Barth, T. Bhat, L. Buscemi-Robles, C. Costello, A. Engel, S. Gonzalez, K. Green, J. Hill, D. Manning, T. Martin, J. Michaels, J. Mosho, C. Polanish, V. Racaniello, A. Rapiejko, J. Remien, L. Singh, C. Soto, M. Sweet, A. Urist, J. Wanless, K. White

2. Correspondence and Handouts

Items numbered one and two were e-mailed to Members on May 7, 2026. Items number three and four were e-mailed to Members on May 13, 2026. Item number five was e-mailed to members on May 14, 2026.

1. Draft notes from the April 9, 2026 meeting
2. Draft agenda for the May 14, 2026 meeting
3. Copy of presentation: Environmental Update
4. Final agenda for the May 14, 2026 meeting
5. Copy of presentation: *Making AI Work for Science*, presented by Carlos Soto

3. Administrative Items

The meeting was called to order at 6:30 p.m.

Everyone in the room and online introduced themselves. Ken White, Facilitator, reviewed the ground rules and agenda. Acknowledged the members who were able to participate in the site tour and dinner before the meeting.

Quorum was established.

The April 2026 notes/minutes were approved as written.

David Manning mentions the Explore Brookhaven event series that will take place on June 28 (Family Fun Day), July 19 (Dazzling Discoveries), August 2 (Fascinating Physics) as a great way for community to visit the Lab.

Member Keenan brings up the timing of the September meeting by moving to the 4th Thursday in the month, rather than the 2nd Thursday. Amy Engel explains that the meeting was moved to accommodate the Brookhaven Lab staff concert that conflicts on the 2nd Thursday. Manning explains that there will be a full program for both the September and October meeting, though they will be close together, including environment updates and robust science presentations.

Keenan also mentions the noting the passing of Dick Amper, as the Pine Barrens Commission was a founding member of the CAC committee.

Interim Director, John Hill introduces the Scientific presentation from Carlos Soto and reiterates that embodied AI is one of our key initiatives at the Lab.

4. Scientific Presentation – *Making AI Work for Science*, Carlos Soto

- **AI for Science**
 - Improve scientific work (efficiency, faster, etc.)
 - Enable something new
- **AI research & impact at BNL**
 - AI department has worked across all the Lab's directorates, for AI applications for science and AI fundamentals. Treating AI as science and building novel AI methods.
 - Scientists at BNL are building and innovating AI as a science and making sure it has impact on the rest of our science approach.
- **Designing AI for Unique Data Needs**
 - Brookhaven produces large volumes of real-time, multi-source scientific data that varies across detectors and instruments.
 - Because much of this data is sparse and changes over time, AI tools must be designed to recognize and use those features effectively.
 - The AI Department develops advanced algorithms and trains them at scale using Brookhaven and DOE high-performance computing resources.
 - We publish state-of-the-art AI methods and work to put them into the hands of scientists and stakeholders.
- **Bringing AI into the Real World**
 - **AI Security**
 - AI supports nuclear security by improving uranium-enrichment analysis, where accurate measurements are essential for international safeguards.
 - Machine-learning tools can strengthen facility surveillance by allowing robots to perform multiple security tasks at once, including camera validation, radiation detection, and anomaly detection.
 - AI can also help detect manipulated images or "deepfakes," identifying both whether an image was altered and where the manipulation occurred.
 - **Security of AI**
 - The team develops AI that can use novel sensor technologies, including cameras that collect data in fundamentally different ways than standard video cameras.
 - They also make AI models more secure and reliable by protecting them against adversarial attacks designed to cause mistakes in real-world applications.
 - AI models view data as patterns of numbers. To prevent adversarial attacks, we develop models that can better distinguish between different types of data and are harder to confuse.

- We also develop ways to better understand how AI models reach their conclusions, rather than treating them as “black boxes” whose answers are accepted without explanation.
- **Automation & Robotics at BNL**
 - Brookhaven uses AI, robotics, and automation across roughly 20–30 active programs to speed up workflows, improve consistency, and reduce risks.
 - Examples include robotic sample handling at the light source, automated liquid handling for materials research, and using robots to take measurements in hazardous areas instead of sending people.
 - Robotics brings together many specialized fields—including mechanical, electrical, and computer engineering, AI, control theory, and human factors.
 - Because no individual or small team can cover every area, effective robotics research relies on people with complementary expertise working together.
- **AI for Robotics / Embodied AI**
 - Embodied AI brings AI into the physical world by combining foundation models with AI agents that can perceive, reason, plan, and act over time.
 - Foundation models can learn from large, varied datasets and work across multiple types of scientific data, while agents enable robots to carry out tasks, use tools, and improve through experience.
 - Together, these advances can make robots more capable and adaptable, allowing them to perform lab tasks with less step-by-step programming and greater human oversight.
- **Scientific Embodied Agents Lab (SEAL)**
 - Brookhaven’s Scientific Embodied Agents Lab (SEAL), supported by Laboratory and DOE funding, develops advanced robotics for challenging scientific tasks that traditional robots cannot easily perform.
 - The lab focuses on foundation-model approaches that enable robots to handle complex physical tasks, including two-arm manipulation, delicate materials, and actions requiring dexterity.
 - Early work includes using two robotic arms to carefully move a rigid board—an example relevant to safely replacing electrical equipment in hazardous environments.
- **Basic and Applied Research**
 - SEAL combines basic and applied research, including embodied AI, multimodal and spatiotemporal machine learning, scalable models, and AI safety and security.
 - The lab will serve as a robotics testbed, bringing scientific workflows from across Brookhaven into one shared space to develop, test, and refine a range of robotic solutions.
 - This approach can help create a major scientific-action dataset for robotics, capturing how robots interact with real scientific environments and supporting Brookhaven’s leadership in embodied AI across the DOE complex.
- **Resources, Communities and Impact**
 - Building a strong embodied AI program requires collaboration across Brookhaven, as well as partnerships with universities, industry, and other national laboratories.
 - The team engages scientific stakeholders early through workshops, hackathons, and demonstrations so the technology addresses real research needs.
 - Clear communication with the Laboratory and surrounding community will help share the program’s progress, goals, and benefits.
- **Q&A**
 - Q – Member Kern asks about small modular reactors (SMRS) for clarification on what they are doing with them.
 - A – Soto answers that Brookhaven partners with Idaho National Laboratory and others to apply AI and machine learning to reactor safeguards challenges. One

focus is diversion detection—identifying the possible theft of nuclear material from reactors with liquid fuel, where traditional monitoring methods are less effective.

- Q – Member Schuhmann asks if AI can help address concerns about its high energy use?
- A – Soto answers, yes. Brookhaven is advancing more energy-efficient AI through “co-design,” which improves both AI algorithms and the specialized computer chips they run on. As next-generation hardware becomes available, it can significantly reduce the energy required for AI systems.
- Q – Member Schuhmann what will graduate students and postdoctoral researchers do as AI-enabled robots become more common?
- A – Soto answers Robots are intended to elevate researchers by taking on repetitive or hazardous work, not replace them. This would allow students and scientists to focus more on higher-level problem-solving and innovation. For example, robots could help assemble complex detectors in difficult environments, such as deep underground, reducing the need for graduate students to perform months of hazardous manual work.
- Q – Member Jordan Sweet asks if there is a process to ensure AI training data is used with proper permission?
- A – Soto answers, yes. Data access and permissions are a core part of data management. Brookhaven works with technical, policy, and governance experts to ensure appropriate access controls are in place. One example is Project Alexandra, an NNSA initiative that organizes data under a shared permissions model; it launched several months ago.
- Amy Engel states that she speaks to the public via civic associations and chambers, and was asked during one of these speaking engagements if there was an equivalent of NATO for AI?
- A – Soto answers that AI governance is still evolving, but standards bodies, governments, industry, and academic groups are developing best practices for AI safety, security, data use, and interoperability. Organizations such as NIST and ISO help establish standards and protocols that can support responsible, consistent use of AI.
- Q- Member Pickerell asks what does it mean to publish at a top AI conference, and is it peer reviewed?
- A – Soto answers in computer science and AI, leading conferences are a primary form of publication. Like journals, conference papers are peer reviewed, but the process is faster and follows set deadlines. This allows researchers to share advances more quickly in a fast-moving field, while preprint archives may be used to share work even earlier.
- Q – Member Freeman asks on the scaling models for AI in the development, is there a neocortical style tier group in the scaling? And is there any oversight as the computer learns through the AI model and it graduates? Is there any reporting or security protocols in place to make sure it doesn't go outside those boundaries?
- A- Soto answers yes. The main risks are not an AI model independently “going outside the guardrails,” but how it connects to data, software tools, sensors, motors, and other real-world resources. Brookhaven addresses these risks through security and safety controls at those interfaces, especially for embodied AI and robotics.
- Q- Member Freeman also asks since heart muscle cells can be influenced by nearby nerve cells, are AI models independently encrypted to prevent outside systems from influencing or compromising them?
- A- Soto answers, no. This type of unintended influence is not a risk for current AI models or the hardware they use. The biological behavior described in heart

tissue and neurons is driven by processes that are fundamentally different from how AI software and computer hardware operate.

- Q – Member Kern asks what is being done to reduce the energy demand of AI data centers?
- A – Soto answers that efforts are underway on both the algorithm and hardware sides. Researchers are developing AI methods that can scale more efficiently, while new chip designs aim to reduce the energy used to constantly move data between memory and processors, a major source of today's inefficiency.
- Q – Member Jordan Sweet asks with limits on chip advances and growing AI energy demand, could AI eventually require an unsustainable amount of the world's energy?
- A – Soto answers that current approaches cannot continue indefinitely, but the field is already moving toward new algorithms and much more efficient hardware. The speaker noted that biological intelligence demonstrates highly efficient computation is possible; the challenge is translating that efficiency into future AI hardware.

5. Environmental Updates – Jason Remien & Brian Barth

- **Environmental Compliance Program - Dashboard Update, Jason Remien**
 - There has been no change since the last meeting with the key primary environmental programs, all green.
- **Environmental Program Metrics**
 - State Pollutant Discharge Elimination System (SPDES): since 2024 and to present we have not received any violations.
 - Total Spills: 8 spills, 2 reportable since the beginning of the calendar year.
 - Since last month there have been two additional spills
 - A boom lift had a hydraulic oil leak, it was small leak and cleaned up right away, with no real impact to the environment. This spill was not reportable to the state.
 - Brookhaven disinfects its drinking water with sodium hypochlorite, like local public water systems. Larger storage tanks are regulated by New York State and Suffolk County. An inspection found a small leak from a pump connection into the tank's secondary containment. There was no release to the environment, but the Lab notified regulators as required. The tank was emptied, and the Lab plans to replace it and related equipment to fully correct the issue.
 - Central Steam Facility Annual Air Emission: no change from last month
- **Natural Resources Program**
 - Newsday video clip featuring Kathy Schwager discussing southern pine beetle damage in the Pine Barrens.
 - Timely to share the video as this is the time of year best suited for conditions for prescribed burns.
 - Brookhaven is preparing prescribed burns to help manage forest health and reduce wildfire risk, led by Kathy Schwager in collaboration with Fire Rescue, the New York State DEC, and the Pine Barrens Commission.
 - Burn areas are prioritized based on risk and readiness, particularly along the Lab's northern boundary near neighboring homes. Burns can occur only when weather conditions and resources are appropriate.

- Southern pine beetle damage has severely affected some wooded areas on site, making long-term forest management an ongoing priority.

Q – Member Freeman asks if there are any trees that can be replaced by the Lab or anyone else in the Pine Barrens.

A – Remien explains that the plan is to allow the forest to regenerate naturally rather than replanting trees. Pitch pine is expected to return, and prescribed burns can encourage healthier regrowth with more open spacing and a greater variety of native plants.

Q – Member Jordan Sweet asks is the eastern white pine susceptible to southern pine beetle damage?

A – Remien explains that the pitch pine appears to be the beetle's preferred host. Eastern white pines can also be affected, particularly where they are grouped closely together; more isolated trees may be less vulnerable.

Q – Engel asks if there is a predator that will eat the beetle?

A – Remien answers that he is not sure, but it is possible. Member Tim Green is asked for consult, and answers that he thinks there is, but they are not voracious enough to overcome the vast increase in the population of the pine beetle.

Q – Member Freeman referenced the Apaches in California and their use of controlled burns, noting that pinecones will not open until they reach about 2,500 degrees. He asked whether the Lab is also looking to use this approach.

A – Remien explains that the primary goal of prescribed burns is to manage and improve forest health. However, the burns can also support the natural regeneration of fire adapted pine species by creating conditions that allow them to reproduce and grow.

Groundwater Update – Brian Barth

• VOC Remediation System Status – Dashboard

- No status change since last meeting
- Building 96 Status
 - The Building 96 groundwater cleanup project remains green. Following 2024 injections of carbon and a treatment reagent, source-area concentrations have been non-detect or near detection limits.
 - After the extraction well was temporarily shut down, some downgradient monitoring wells showed a modest rebound. Once the well was restarted, concentrations returned to pre-injection levels and remain below the system's 50-parts-per-billion capture goal for total VOCs.
 - The Lab expects to seek shutdown of the system in 2026 or 2027, while continuing to monitor progress toward the overall 2030 cleanup goal.

• Radiological Remediation Status – Dashboard

- No status change since last meeting
- In the coming weeks and months, the Lab will conduct routine field characterization for several groundwater monitoring and remediation projects. This triennial work verifies plume locations, migration, and contaminant concentrations.
- Results from this work are expected to be shared in the fall.

• PFAS Remediation System Status – Dashboard

- No status change since last meeting

• Groundwater Updates

- The annual groundwater status report, which provides a comprehensive review of 2025 data, is completing internal review and is expected to be sent to DOE in mid to late June.

- The 2026 CERCLA Five-Year Review will also be sent to regulators shortly. The Lab expects to present updates on both reports in the fall.
 - Additional characterization is underway at the current Firehouse to identify higher-concentration areas of the Building 170 PFAS plume and determine where additional extraction wells may be needed.
 - Pre-characterization work was completed at Building 526.
- **William Floyd Well Field Monitoring**
 - Following the detection of PFAS in a Suffolk County Water Authority supply well, the Lab enhanced its on-site monitoring network near the William Floyd Wellfield to better track groundwater moving through the area.
 - Two new monitoring wells were installed at different depths to monitor PFAS and 1,4-dioxane. Earlier characterization showed that the higher-concentration portion of the PFAS plume was not being drawn into the Wellfield's capture zone.
 - The new wells will enter routine sampling this quarter, and the Lab will continue shared sampling.
- **Current Fire House/ Building 170 PFAS**
 - The Building 170/current Firehouse PFAS treatment project is addressing contamination from two former Fire Department foam-training areas.
 - Changes in groundwater flow, including the shift from the western to eastern potable wellfield, altered the direction of the plumes. The Lab is conducting additional characterization to locate the highest concentrations and determine where new extraction wells are needed.
 - While design work continues, the Lab has increased flow at the existing source-area extraction wells to strengthen capture of the contamination.
- **Building 526 Pre-Demolition Soil Sampling**
 - Building 526, a former research and office facility that has been unused for many years, is scheduled for demolition.
 - Before demolition, the Lab sampled soil beneath the building's slab. Chemical results were either non-detect or below industrial soil protection standards, and radiological results were non-detect or below background levels.
 - Building 526 was evaluated as a potential PFAS source area because it historically had a foam fire-suppression system and PFAS had been detected in downgradient groundwater.
 - Before demolition, the Lab collected shallow soil samples at eight locations around the building in accordance with the Draft OU X Remedial Investigation Work Plan. Only one sample showed a very slight elevation, at a level below what may be considered background or rainwater deposition.
 - The results are not consistent with a significant PFAS release. Demolition will proceed as planned.

Q – Member Perez asks if the Lab changed its protocol—such as using ground-penetrating radar—to identify features beneath a building that may not appear on existing plans because of the mercury that was found in a different building during a previous demolition?

A – Remien explains that the mercury contamination at Building 197 was already known from earlier site investigations and records of a past spill. Cleanup began in the late 1990s but was paused because it could affect the building's footings; it resumed when the building was later demolished. The scope was greater than expected. This experience informed the approach for Building 526: because research had also occurred there, the Lab conducted soil sampling beneath the building before demolition.

6. Community Comment

Tiffany Martin shares that a health screening program is available for former Brookhaven Lab workers. Screenings include a physical exam, chest X-ray, hearing test, blood work, and breathing tests at a local Long Island clinic. Eligible participants may also receive annual low-dose CT lung cancer screening scans. Contact information can be shared with interested individuals.

7. Agenda Setting

- Fall Agenda: Quantum/Site Environmental Report/Groundwater updates
- Future topics:
 - AI and Nanotechnology (Quantum Press)
 - Quantum
 - LuSEE-Night
 - Yaphank-BNL Railroad update

Q – Member Williams asks about the Yaphank Railroad station status.

A – Manning explains that the new Yaphank–BNL station is complete, with signage installed, and is expected to open following the resolution of a possible service strike. A public opening event is anticipated. Phase 1 includes a small station with parking for about 55 cars and bus access. Brookhaven plans to coordinate shuttles to meet trains, and Suffolk County is considering a connecting mini-route. A future Phase 2 could include electrification from Ronkonkoma to BNL, expanded service and parking, and a larger role for the station as a regional transit hub.

Meeting adjourned at 8:29 pm

Next meeting: September 24, 2026

X = Present	2026	Affiliation		First Name	Last Name	Jan	Feb No mtg	Mar	Apr	May	June No mtg	July No mtg	Aug No mtg	Sep	Oct	Nov	Dec No mtg
ABCO – Civic	Member	Ray	Keenan	X			X	X	X								
	Alternate	Michael	Madigan														
Brookhaven Coalition of Chambers of Commerce – Business & Labor	Member	Ron	Trotta						X								
	Alternate	Carmine	Inserra														
Brookhaven Retired Employees Association- BNL Affiliation	Member	Mark	Israel	X			X	X	X								
	Alternate	Eena-Mai	Franz														
	Alternate	Arnold	Moodenbaugh														
Brookhaven Village Association – Civic	Member	Reinhardt	Schuhmann	X			X	X	X								
	Alternate	Chris	Ciervo														
Citizens Campaign for the Environment – Advocacy & Environment	Member	Adrienne	Esposito	X			X	X									
	Alternate	Christina	Lizzo	X			X	X									
Cornell Cooperative Extension – Health based	Member	Chris	Pickerell						X								
	Alternate	Lorne	Brousseau														
Country Pointe Meadows – Civic	Member	Jeff	Williams	X			X		X								
	Alternate																
East Yaphank Civic Association - Civic	Member	Robert	Feinman														
	Alternate	Laura	Reid														
Emeritus	Member	David	Sprintzen					X	X								
FOREST - Advocacy & Environment	Member	Tim	Green	X			X		X								
	Alternate																
Foundation for Economic Education – Education, Science & Technology	Member	Craig	Pratka	X			X	X	X								
	Alternate	Christian	Price	X			X										
Individual	Member	James	Freeman	X			X		X								
Individual	Member	Jane	Corrarino														
Individual	Member	Karen	Blumer	X													
	Alternate	Michael	Madigan	X				X	X								
L.I. Pine Barrens Society – Advocacy & Environment	Member	Nina	Leonhardt														
	Alternate	Travis	Cutter	X			X	X	X								

Longwood Central School Dist. – Education, Science & Technology	Member	James	Crenshaw													
	Alternate															
Middle Island Civic Association – Civic	Member	Martin	Filler	X		X		X								
	Alternate	Margaret	Malloy													
	Alternate 2	Larry	Mazza				X									
National Grid – Business & Labor	Member	Brian	Sapp	X		X	X	X								
	Alternate	Michelle	Zarifis					X								
New York League of Conservation Voters – Advocacy & Environment	Member	Casey	Petrashek													
	Alternate	Joseph	Stallone	X		X										
NSLS-II User Committee – BNL Affiliation	Member	Jean	Jordan-Sweet	X		X		X								
	Alternate	Matthew	Whitaker				X	X								
Ridge Civic Association – Civic	Member	Scott	Wood													
	Alternate	Barbara	Royce					X								
Stony Brook Hospital – Health based	Member	Erika	Karp	X		X	X									
	Alternate	Kristin	Busardo-Cuomo					X								
Suffolk County Legislature 1st Dist. – Government	Member															
	Alternate															
Teachers Federal Credit Union – Business & Labor	Member	Jashmin	Futch			X	X	X								
	Alternate	Kathleen	Misiano													
Town of Brookhaven – Government	Member	Karen	Dunne Kesnig													
	Alternate 1	Patricia	Kaloski	X												
	Alternate 2	Julia	Norris	X												
Town of Riverhead - Government	Member	Robert	Kern			X	X	X								
	Alternate	Frank	Mancini													
Wading River Civic Association - Civic	Member	Henry	Perez	X		X	X	X								
	Alternate	Linda	Rundlett													