AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
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II

115TH CONGRESS
1ST SESSION

S. 1425

To reauthorize the Integrated Coastal and Ocean Observation System Act of 2009, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 22, 2017

Mr. WICKER (for himself, Ms. CANTWELL, Ms. MURKOWSKI, Mr. SULLIVAN, Mr. CASSIDY, Mr. GRAHAM, Ms. COLLINS, Mr. MARKEY, Mr. SCHATZ, and Mr. PETERS) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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A BILL

To reauthorize the Integrated Coastal and Ocean Observation System Act of 2009, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Coordinated Ocean Monitoring and Research Act''.

SEC. 2. PURPOSES.

Section 12302 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3601) is amended to read as follows:

"SEC. 12302. PURPOSES.

''The purposes of this subtitle are—

''(1) to establish and sustain a national integrated System of ocean, coastal, and Great Lakes observing systems, comprised of Federal and non-Federal components coordinated at the national level by the Council and at the regional level by a network of Regional Coastal Observing Systems, and that includes in situ, remote, and other coastal and ocean observation and modeling capabilities, technologies, data management systems, communication systems, and product development systems, and is designed to address regional and national needs for ocean and coastal information, to gather specific data on key coastal, ocean, and Great Lakes variables, and to ensure timely and sustained dissemination and availability of these data—

''(A) to the public;

''(B) to support national defense, search and rescue operations, marine commerce, navigation safety, weather, climate, and marine forecasting, energy siting and production, economic development, ecosystem-based marine, coastal, and Great Lakes resource management, public safety, and public outreach and education;

''(C) to promote greater public awareness and stewardship of the Nation's ocean, coastal, and Great Lakes resources and the general public welfare;

''(D) to provide easy access to ocean, coastal, and Great Lakes data and promote data sharing between Federal and non-Federal sources and promote public data sharing;

''(E) to enable advances in scientific understanding to support the sustainable use, conservation, management, and understanding of healthy ocean, coastal, and Great Lakes resources; and

''(F) to monitor and model changes in ocean chemistry;

''(2) to improve the Nation's capability to measure, track, observe, understand, and predict events related directly and indirectly to weather and climate change, natural climate variability, and interactions between the oceanic and atmospheric environments, including the Great Lakes; and

''(3) to authorize activities—

''(A) to promote basic and applied research to develop, test, and deploy innovations and improvements in coastal and ocean observation

technologies, including advanced observing technologies needed to address critical data gaps, modeling systems, other scientific and technological capabilities to improve the understanding of weather and climate, ocean-atmosphere dynamics, global climate change, and the physical, chemical, and biological dynamics of the ocean, coastal and Great Lakes environments; and

''(B) to conserve healthy and restore degraded coastal ecosystems.''.

SEC. 3. DEFINITIONS.

Section 12303 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3602) is amended—

(1) in paragraph (5), by striking ''States, regional organizations, universities, nongovernmental organizations, or the private sector.'' and inserting ''the regional coastal observing systems, the National Oceanic and Atmospheric Administration, or the Interagency Ocean Observation Committee.'';

(2) by amending paragraph (6) to read as follows:

''(6) REGIONAL COASTAL OBSERVING SYSTEM.—The term 'regional coastal observing system'

means an organizational body that is certified or established by contract or memorandum by the lead Federal agency designated in section 12304(c)(3) and coordinates State, Federal, local, tribal, and private interests at a regional level with the responsibility of engaging the private and public sectors in designing, operating, and improving regional coastal and ocean observing systems in order to ensure the provision of data and information that meet the needs of user groups from the respective regions.''; and

(3) in paragraph (7), by striking ''National Oceanic and Atmospheric Administration.'' and inserting ''Administrator.''.

SEC. 4. INTEGRATED COASTAL AND OCEAN OBSERVATION SYSTEM.

(a) SYSTEM ELEMENTS.—

(1) IN GENERAL.—Section 12304(b) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3603(b)) is amended by striking paragraph (1) and inserting the following:

''(1) IN GENERAL.—In order to fulfill the purposes of this subtitle, the System shall be national in scope and consist of—

''(A) Federal assets to fulfill national and international observation missions and priorities;

''(B) non-Federal assets, including a network of regional coastal observing systems identified under subsection (c)(4), to fulfill regional and national observation missions and priorities;

''(C) data management, communication, and modeling systems for the timely integration and dissemination of data and information products from the System;

''(D) a product development system to transform observations into products in a format that may be readily used and understood; and

''(E) a research and development program conducted under the guidance of the Council, consisting of—

''(i) basic and applied research and technology development—

''(I) to improve understanding of coastal and ocean systems and their relationships to human activities; and

''(II) to ensure improvement of operational assets and products, including related infrastructure, observing technologies, and information and data processing and management technologies;

''(ii) an advanced observing technology development program to fill gaps in technology;

''(iii) large scale computing resources and research to advance modeling of coastal and ocean processes;

''(iv) models to improve regional weather forecasting capabilities and regional weather forecasting products; and

''(v) reviews of data collection procedures across regions and programs to make recommendations for data collection standards across the System to meet national ocean observation, applied research, and weather forecasting needs.''.

(2) AVAILABILITY OF DATA.—Paragraph (3) of section 12304(b) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3603(b)) is amended by striking the period at the

end and inserting ''for research and for use in the development of products to address societal needs.''.

(3) COORDINATION OF NON-FEDERAL ASSETS.—Paragraph (4) of section 12304(b) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3603(b)) is amended—

(A) in the paragraph heading, by striking ''NON-FEDERAL'' and inserting ''COORDINATION OF NON-FEDERAL''; and

(B) by inserting '', the regional coastal observing system,'' after ''Interagency Ocean Observing Committee''.

(b) POLICY OVERSIGHT, ADMINISTRATION, AND REGIONAL COORDINATION.—Section 12304(c) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3603(c)) is amended by striking paragraphs (2), (3), and (4), and inserting the following:

''(2) INTERAGENCY OCEAN OBSERVATION COMMITTEE.—

''(A) ESTABLISHMENT.—The Council shall establish or designate a committee which shall be known as the Interagency Ocean Observation Committee.

''(B) DUTIES.—The Interagency Ocean Observation Committee shall—

''(i) prepare annual and long-term plans for consideration and approval by the Council for the integrated design, operation, maintenance, enhancement, and expansion of the System to meet the objectives of this chapter and the System Plan;

''(ii) develop and transmit to Congress, along with the budget submitted by the President to Congress pursuant to section 1105(a) of title 31, United States Code, an annual coordinated, comprehensive budget—

''(I) to operate all elements of the System identified in subsection (b); and

''(II) to ensure continuity of data streams from Federal and non-Federal assets;

''(iii) establish requirements for observation data variables to be gathered by both Federal and non-Federal assets and identify, in consultation with regional information coordination entities, priorities for System observations;

''(iv) establish and define protocols and standards for System data processing, management, collection, configuration standards, formats, and communication for new and existing assets throughout the Integrated Ocean Observing System network;

''(v) develop contract requirements for each Regional Coastal Observing System—

''(I) to establish eligibility for integration into the System;

''(II) to ensure compliance with all applicable standards and protocols established by the Council; and

''(III) to ensure that regional observations are integrated into the System on a sustained basis;

''(vi) identify gaps in observation coverage or needs for capital improvements of both Federal assets and non-Federal assets;

''(vii) subject to the availability of appropriations, establish through one or more participating Federal agencies, in consultation with the System advisory committee established under subsection (d), a com-

petitive matching grant or other programs—

''(I) to promote intramural and extramural research and development of new, innovative, and emerging observation technologies including testing and field trials; and

''(II) to facilitate the migration of new, innovative, and emerging scientific and technological advances from research and development to operational deployment;

''(viii) periodically—

''(I) review the System Plan; and

''(II) submit to the Council such recommendations as the Interagency Ocean Observation Committee may have for improvements to the System Plan;

''(ix) ensure collaboration among Federal agencies participating in the activities of the Interagency Ocean Observation Committee; and

''(x) perform such additional duties as the Council may delegate.

''(3) LEAD FEDERAL AGENCY.—

''(A) IN GENERAL.—The National Oceanic and Atmospheric Administration shall function as the lead Federal agency for the implementation and administration of the System.

''(B) CONSULTATION REQUIRED.—In carrying out this paragraph, the Administrator shall consult with the Council, the Interagency Ocean Observation Committee, other Federal agencies that maintain portions of the System, and the Regional Coastal Observing Systems.

''(C) REQUIREMENTS.—In carrying out this paragraph, the Administrator shall—

''(i) establish and operate an Integrated Ocean Observing System Program Office within the National Oceanic and Atmospheric Administration—

''(I) that utilizes, to the extent necessary, personnel from member agencies participating on the Interagency Ocean Observation Committee; and

''(II) oversees daily operations and coordination of the System;

"(ii) implement policies, protocols, and standards approved by the Council and delegated by the Interagency Ocean Observation Committee;

"(iii) promulgate program guidelines—

"(I) to certify and integrate regional associations into the System; and

"(II) to provide regional coastal and ocean observation data that meet the needs of user groups from the respective regions;

"(iv) have the authority to enter into and oversee contracts, leases, grants or cooperative agreements with non-Federal assets, including regional information coordination entities, to support the purposes of this chapter on such terms as the Administrator deems appropriate;

"(v) implement and maintain a merit-based, competitive funding process to support non-Federal assets, including the development and maintenance of a network of Regional Coastal Observing Systems,

and develop and implement a process for the periodic review and evaluation of the regional associations;

''(vi) provide opportunities for competitive contracts and grants for demonstration projects to design, develop, integrate, deploy, maintain, and support components of the System;

''(vii) establish and maintain efficient and effective administrative procedures for allocation of funds among contractors, grantees, and non-Federal assets, including regional associations in a timely manner;

''(viii) develop and implement a process for the periodic review and evaluation of the Regional Coastal Observing Systems;

''(ix) formulate an annual process by which gaps in observation coverage or needs for capital improvements of Federal assets and non-Federal assets of the System are—

''(I) identified by the regional associations described in the System

Plan, the Administrator, or other members of the System; and

''(II) submitted to the Interagency Ocean Observing Committee;

''(x) develop and be responsible for a data management and communication system, in accordance with standards and protocols established by the Interagency Ocean Observing Committee, by which all data collected by the System regarding ocean and coastal waters of the United States including the Great Lakes, are processed, stored, integrated, and made available to all end-user communities;

''(xi) not less frequently than once each year, submit to the Interagency Ocean Observing Observation Committee a report on the accomplishments, operational needs, and performance of the System to contribute to the annual and long-term plans prepared pursuant to paragraph (2)(B)(i);

''(xii) develop and periodically update a plan to efficiently integrate into the System new, innovative, or emerging tech-

nologies that have been demonstrated to be useful to the System and which will fulfill the purposes of this chapter and the System Plan; and

''(xiii) work with users and Regional Associations to develop products to enable real-time data sharing for decision makers, including with respect to weather forecasting and modeling, search and rescue operations, corrosive seawater forecasts, water quality monitoring and communication, and harmful algal bloom forecasting.

''(4) REGIONAL COASTAL OBSERVING SYSTEMS.—

''(A) IN GENERAL.—A Regional Coastal Observing System operated by a Regional Association described in the System Plan may not be certified or established under this subtitle unless it—

''(i) has been or shall be certified or established by contract or agreement by the Administrator;

''(ii) meets—

''(I) the certification standards and compliance procedure guidelines issued by the Administrator; and

''(II) the information needs of user groups in the region while adhering to national standards;

''(iii) demonstrates an organizational structure, that under funding limitations is capable of—

''(I) gathering required System observation data;

''(II) supporting and integrating all aspects of coastal and ocean observing and information programs within a region; and

''(III) reflecting the needs of State, local, and tribal governments, commercial interests, and other users and beneficiaries of the System and other requirements specified under this subtitle and the System Plan;

''(iv) identifies—

''(I) gaps in observation coverage needs for capital improvements of

Federal assets and non-Federal assets of the System;

''(II) other recommendations to assist in the development of the annual and long-term plans prepared pursuant to paragraph (2)(B)(i) and transmit such information to the Interagency Ocean Observation Committee via the Program Office established under paragraph (3)(C)(i);

''(v) develops and operates under a strategic operational plan that will ensure the efficient and effective administration of programs and assets to support daily data observations for integration into the System, pursuant to the standards approved by the Council;

''(vi) works cooperatively with governmental and nongovernmental entities at all levels to identify and provide information products of the System for multiple users within the service area of the regional coastal observing system; and

''(vii) complies with all financial oversight requirements established by the Ad-

ministrator, including requirements relating to audits.

''(B) PARTICIPATION.—For the purposes of this title, employees of Federal agencies are permitted to be members of the governing body for the Regional Coastal Observing Systems and may participate in the functions of the regional information coordination entities.''.

(c) SYSTEM ADVISORY COMMITTEE.—Section 12304(d) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3603(d)) is amended—

(1) in paragraph (1), by striking ''or the Interagency Ocean Observing Observation Committee.'' and inserting ''the Council under this subtitle''; and

(2) in paragraph (2)—

(A) in subparagraph (A), by inserting ''data sharing,'' after ''data management'';

(B) in subparagraph (C), by striking ''and'' at the end; and

(C) by striking subparagraph (D) and inserting the following:

''(D) additional priorities, including—

''(i) a national surface current mapping network designed to improve fine

scale sea surface mapping using high frequency radar technology and other emerging technologies to address national priorities, including Coast Guard search and rescue operation planning and harmful algal bloom forecasting and detection that—

''(I) is comprised of existing high-frequency radar and other sea surface current mapping infrastructure operated by regional associations;

''(II) incorporates new high-frequency radar assets or other fine scale sea surface mapping technology assets, and other assets needed to fill gaps in coverage on United States coastlines; and

''(III) follows deployment plan that prioritizes closing gaps in high frequency radar infrastructure in the United States, starting with areas demonstrating significant sea surface current data needs, especially in areas where additional data will improve

Coast Guard search and rescue models;

''(ii) fleet acquisition for autonomous underwater and surface vehicles for deployment and data integration to fulfill the purposes of the Act;

''(iii) an integrative survey program for application of manned and unmanned vehicles to the real-time or near real-time collection and transmission of seafloor, water column, and sea surface data on biology, chemistry, geology, physics and hydrography;

''(iv) remote sensing and data assimilation to develop new analytical methodologies to assimilate data from the Integrated Ocean Observing System into hydrodynamic models;

''(v) integrated, multi-State monitoring to assess sources, movement and fate of sediments in coastal regions;

''(vi) a multi-region marine sound monitoring system to be—

''(I) planned in consultation with the International Ocean Observing

Committee, the National Oceanic and Atmospheric Administration, and academic research institutions; and

''(II) developed, installed, and operated in coordination with the National Oceanic and Atmospheric Administration and academic research institutions; and

''(E) any other purpose identified by the Administrator or the Council.'';

(D) in paragraph (3)(B), by inserting ''The Secretary has the ability to stagger the terms of the System advisory committee members.'' before ''Members''; and

(E) in paragraph (4)—

(i) in subparagraph (A), by striking ''and the Interagency Ocean Observing Committee''; and

(ii) in subparagraph (C), by striking ''Observing'' and inserting ''Observation''.

(d) CIVIL LIABILITY.—Section 12304(e) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3603(e)) is amended—

(1) by striking ''information coordination entity'' and inserting ''coastal observation system''; and

(2) by striking ''non-Federal asset or regional information coordination entity'' and inserting ''Regional Coastal Observing System,''.

SEC. 5. INTERAGENCY FINANCING AND AGREEMENTS.

Section 12305(a) of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3604(a)) is amended to read as follows:

''(a) IN GENERAL.—To carry out interagency activities under this subtitle, the Secretary of Commerce may execute an agreement, on a reimbursable or nonreimbursable basis, with any State or subdivision thereof, any Federal agency, or any public or private organization, or individual to carry out interagency activities under this subtitle.''.

SEC. 6. REPORTS TO CONGRESS.

Section 12307 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3606) is amended to read as follows:

''(a) REQUIREMENT.—Not later than 2 years after March 30, 2009, and every 3 years thereafter, the Administrator shall prepare and the President acting through the Council shall approve and transmit to the Congress a report on progress made in implementing this subtitle.

''(b) CONTENTS.—Each report required by subsection (a) shall include—

''(1) a description of activities carried out under this subtitle and the System Plan;

''(2) an evaluation of the effectiveness of the System, including an evaluation of progress made by the Council to achieve the goals identified under the System Plan;

''(3) identification of Federal and non-Federal assets as determined by the Council that have been integrated into the System, including assets essential to the gathering of required observation data variables necessary to meet the respective missions of Council agencies;

''(4) a review of procurements, planned or initiated, by each Council agency to enhance, expand, or modernize the observation capabilities and data products provided by the System, including data management and communication subsystems;

''(5) a summary of the existing gaps in observation infrastructure and monitoring data collection, including—

''(A) priorities considered by the System advisory committee;

''(B) the national sea surface current mapping network;

''(C) coastal buoys, and;

''(D) ocean chemistry monitoring;

''(6) an assessment regarding activities to integrate Federal and non-Federal assets, nationally and on the regional level, and discussion of the performance and effectiveness of regional information coordination entities to coordinate regional observation operations;

''(7) a description of benefits of the program to users of data products resulting from the System (including the general public, industries, scientists, resource managers, emergency responders, policy makers, and educators);

''(8) recommendations concerning—

''(A) modifications to the System; and

''(B) funding levels for the System in subsequent fiscal years; and

''(9) the results of a periodic external independent programmatic audit of the System.''.

SEC. 7. PUBLIC-PRIVATE USE POLICY.

Section 12308 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3607) is amended to read as follows:

''The Council shall maintain a policy that defines processes for making decisions about the roles of the Federal Government, the States, regional information coordi-

nation entities, the academic community, and the private sector in providing to end-user communities environmental information, products, technologies, and services related to the System. The Administrator shall ensure that National Oceanic and Atmospheric Administration adheres to the decision making process developed by the Council regarding the roles of the Federal Government, the States, the Regional Coastal Observing Systems, the academic communities, and the private sector in providing the end-user communities environmental information, data products, technologies, and services related to the System.''.

SEC. 8. INDEPENDENT COST ESTIMATE.

The Integrated Coastal and Ocean Observation System Act of 2009 is amended by striking section 12309 (33 U.S.C. 3608).

SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

Section 12311 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3610) is amended by striking section ''2013'' and inserting ''2021''.

SEC. 10. REPORTS AND RESEARCH PLANS.

Section 12404(c) of the Federal Ocean Acidification Research And Monitoring Act of 2009 (33 U.S.C. 3703(c)) is amended by adding at the end the following:

''(4) ECONOMIC VULNERABILITY REPORT.—Not later than 1 year after the enactment of the Coordinated Ocean Monitoring and Research Act, and every 5 years thereafter, the Subcommittee shall transmit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology and the Committee on Natural Resources of the House of Representatives a report that—

''(A) is named 'The Ocean Chemistry Coastal Community Vulnerability Assessment';

''(B) identifies gaps in ocean acidification monitoring by public, academic, and private assets in the network of regional coastal observing systems;

''(C) identifies areas which have gaps in ocean acidification research;

''(D) identifies United States coastal communities, including fishing communities, low-population rural communities, tribal and subsistence communities, and island communities, that may be impacted by ocean acidification;

''(E) identifies impacts of changing ocean pH on the communities described in subparagraph (D), including impacts from changes in

ocean and coastal marine resources that are not managed by the Federal Government;

''(F) identifies gaps in understanding of the impacts of ocean acidification on economically or commercially important species, particularly those which support United States commercial, recreational, and tribal fisheries and aquaculture;

''(G) identifies habitats that are particularly vulnerable to corrosive sea water, including areas experiencing multiple stressors such as hypoxia, sedimentation and harmful algal blooms;

''(H) identifies areas in which existing Integrated Ocean Observing System assets, including buoys and gliders, that may be leveraged as platforms for the deployment of new sensors; and

''(I) is written in collaboration with the agencies responsible for carrying out this Act.

''(5) MONITORING PRIORITIZATION PLAN.—Not later than 180 days after the submission of the report required by paragraph (4), the Subcommittee shall transmit to the Committee on Commerce, Science, and Transportation of the Senate and the

Committee on Science, Space, and Technology and the Committee on Natural Resources of the House of Representatives a report that develops a plan to deploy new sensors—

''(A) based on the report required by paragraph (4);

''(B) prioritized by—

''(i) the threat to coastal economies and ecosystems;

''(ii) gaps in data; and

''(iii) research needs; and

''(C) that leverage existing platforms, where possible.''.

SEC. 11. STRATEGIC RESEARCH PLAN.

(a) CONTENTS.—Section 12405(b) of the Federal Ocean Acidification Research And Monitoring Act of 2009 (33 U.S.C. 3704(b)) is amended—

(1) in paragraph (8), by striking ''and'' at the end;

(2) in paragraph (9), by striking the period at the end and inserting a semicolon and ''and''; and

(3) by adding at the end the following:

''(10) make recommendations for research to be conducted, including in the social sciences and economics, to address the key knowledge gaps identified

in the economic vulnerability report conducted under section 12404(c).''.

(b) PROGRAM ELEMENTS.—Section 12405(c) of the Federal Ocean Acidification Research And Monitoring Act of 2009 (33 U.S.C. 3704(c)) is amended by adding at the end the following:

''(6) Research to understand combined effects of changes in ocean chemistry, sediment delivery, hypoxia and harmful algal blooms and the impact these processes have on one another, and how these multiple stressors impact living marine resources and coastal ecosystems.

''(7) Applied research to identify adaptation strategies for species impacted by changes in ocean chemistry including vegetation-based systems, shell recycling, species and genetic diversity, applied technologies, aquaculture methodologies, and management recommendations.''.

SEC. 12. STAKEHOLDER INPUT ON MONITORING.

Section 12406(a) of the Federal Ocean Acidification Research And Monitoring Act of 2009 (33 U.S.C. 3705(a)) is amended—

(1) in paragraph (2), by striking ''and'' at the end;

(2) in paragraph (3), by striking the period at the end and inserting a semicolon and ''and''; and

(3) by adding at the end the following:

''(4) includes an ongoing mechanism that allows potentially affected industry members, coastal stakeholders, fishery management councils and commissions, non-Federal resource managers, and scientific experts to provide input on monitoring needs that are necessary to support on the ground management, decision making, and adaptation related to ocean acidification.''.

SEC. 13. RESEARCH ACTIVITIES.

Section 12407(a) of the Federal Ocean Acidification Research And Monitoring Act of 2009 (33 U.S.C. 3706(a)) is amended to read as follows:

''(a) RESEARCH ACTIVITIES.—The Director of the National Science Foundation shall continue to carry out research activities on ocean acidification which shall support competitive, merit-based, peer-reviewed proposals for research, observatories and monitoring of ocean acidification and its impacts, including—

''(1) impacts on marine organisms and marine ecosystems;

''(2) impacts on ocean, coastal, and estuarine biogeochemistry;

''(3) the development of methodologies and technologies to evaluate ocean acidification and its impacts; and

''(4) impacts of multiple stressors on ecosystems exhibiting hypoxia, harmful algal blooms, or sediment delivery, combined with changes in ocean chemistry.''.

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