
Establishment of the Faculty of Climate

In October 2021, the University Senate voted unanimously to establish the Faculty of Climate, thus enabling the development of the Climate School, Columbia's first new school in twenty years and the first Climate School in the United States. This vote followed an extensive period of review in the Education Committee and deliberations across the University Senate, involving, in particular, faculty, researchers, and students, as well as consultations with senior administrators, the founding deans of the Faculty of Climate, and others. At the same time, the University Senate voted to expand its membership by one student member, one tenure-track-or-off track faculty member, and one tenured faculty member to represent the new school.

University Senate

Proposed: October 22, 2021

Adopted: October 22, 2021

In favor: Opposed: Abstained: 83:0:0

**RESOLUTION TO AMEND THE UNIVERSITY STATUTES TO ESTABLISH
THE FACULTY OF CLIMATE**

BE IT RESOLVED that the University Senate endorse the revisions of the University Statutes to establish the Faculty of Climate, as set out, below; and

BE IT FURTHER RESOLVED that the University Senate shall forward this resolution to the Trustees of Columbia University, to provide written notice of a proposed University Statute amendment at least thirty days in advance, in accordance with Chapter XLV of the University Statutes which governs the amendment process.

FACULTY OF CLIMATE

Sec. xxx. Faculty The Faculty of Climate shall consist of the President, the Provost or Provosts, the dean(s), and such officers of administration and instruction as may be assigned thereto by the Trustees.

Sec. xxx. Program of Study The program of studies shall be designed to provide technical and professional instruction and research in climate studies and related fields.

Sec. xxx. Degrees

- a. M.A. Candidates for the degree of Master of Arts shall be qualified to receive that degree upon compliance with the conditions prescribed by the University Senate by concurrent action with the Faculty of Climate.

Sec. xxx. Nothing contained herein shall be deemed to impair the powers of the Faculties of Columbia College, General Studies, the Graduate School of Arts and Sciences, the Arts, Professional Studies (which together constitute the Faculty of Arts and Sciences); Architecture, Planning and Preservation; Business; Engineering and Applied Science; Journalism; International and Public Affairs; Law; Dental Medicine; Medicine; Nursing; Public Health (which together constitute the Faculty of Health Sciences); and Social Work and of their several deans.

Sec. 24. Powers

- b. Degrees: to prescribe, by concurrent action with the appropriate Faculty or Administrative Board, the conditions upon which the following degrees shall be conferred and to recommend candidates for such degrees:

Master of Arts (M.A.)—Faculties of the Graduate School of Arts and Sciences, Faculty of the Arts, Faculty of Journalism, Teachers College, Union Theological Seminary, Administrative Board of Arts and Sciences, and Faculty of Climate

Sec. 40. Departments The following departments of instruction are established in the University:
- Climate

Proponent:

Education Committee

Proposal to Establish the Faculty of Climate

Executive Summary

This proposal sets out the key elements involved in the creation of the Faculty of Climate and the future steps in the development of the Climate School. Such a proposal requires the approval of the University Senate, with a three-fifths vote for the necessary changes to be made to the university statutes. This proposal has been considered by the Education Committee, in consultation with the Faculty Affairs Committee, and the Research Officers Committee.

Vision

To develop and inspire knowledge-based solutions and educate future leaders for just and prosperous societies on a healthy planet. The Climate School will provide the scholarship that is urgently needed to tackle climate change and related problems, and offer solutions through transdisciplinary research, partnerships, education, innovative technologies, and the sharing of ideas. It will be unique in design and purpose, built around inter- and transdisciplinary engagement and partnership.

Background

The development of the Climate School builds upon the work of the Climate Task Force, which met in Fall 2019 to consider what more Columbia University might do to tackle the climate crisis. The results of the Task Force discussions, as well as of the many meetings with faculty, officers of research, administrators, students, and leaders from across the different schools, formed the basis of a [Report](#), delivered to President Bollinger and the Columbia Trustees in December 2019. That document focused on several issues related to academic research, education, external engagement, and the design and implementation of solutions. The Report recognized that the problems of climate are hard and complex, covering many dimensions, and requiring an unusually broad degree of original systems thinking across disciplines. This necessitates collaboration between Columbia College, General Studies, the Graduate School of Arts and Sciences, the Arts, and Professional Studies (which together constitute the Faculty of Arts and Sciences), current Columbia schools and other relevant structures such as the Earth Institute, which includes the Lamont-Doherty Earth Observatory.

The Report recommended 11 broad principles for Columbia's new climate initiative. One key recommendation was that the University establish a **Climate School**. It would be unlike a conventional school and distinct from other kinds of environmental entities, including those at Columbia.

Much of the Climate School design has been developed in 2020 during the spreading coronavirus

pandemic. Notwithstanding the unspeakable tragedies and impacts on our ways of living across the world, it has served to usefully illustrate how well or otherwise society at large and societies, more specifically, respond to a global threat. In the case of climate and related sustainability issues, disaster is expected on both regional and global scales, but the full extent will not become evident immediately. Average conditions will change gradually, and as a result, the frequency of some extreme events will increase. Some regions will become uninhabitable, and the loss of life and home environment are expected to be most severe for those already disadvantaged. Conversely, those communities whose livelihoods are dependent on industries that provide fossil fuels are potentially at threat as society transitions its energy sources. Therefore, climate is not just a physical problem to fix; it has serious implications for society as whole, and, raises many complex social justice issues.

Columbia, with its great strength in climate, but also key cognate disciplines, is particularly well placed to establish a climate school. It should aim to provide the requisite education, research and impactful fourth purpose partnerships, so that society is better prepared, and has the right science, technology, and ethical and legal frameworks, to tackle such issues. It should consider the needs of tomorrow's citizens and should expand the fields of expertise needed to achieve these aims. With new technologies, and better understanding, monitoring and prediction, we will help society plan, prepare, transition, and thrive.

A University-wide task force recommended the establishment of a climate school, working in partnership with the deans and faculties of other Columbia schools to take on in a scholarly way an area of tremendous public attention and increasing concern. With the support of President Bollinger, the University's Trustees determined that Columbia's efforts in the area of climate change would be significantly enhanced by the creation of a school and unanimously approved the formation of the Climate School, with the understanding that School's activities would be subject to all regulatory and accreditation requirements and the University's usual programmatic, budget and other approval processes. Since 2020, as the internal planning regarding operational structure has continued, Dr. Halliday and his team have worked with the University Senate to propose changes to the University Statutes to finalize the status of the School and the Faculty within Columbia.

Proposal

1. Leadership & Administration

1.1. Leadership

In April 2021, President Bollinger announced the leadership of the Climate School. The School will be co-led by four of Columbia's most eminent climate experts: Alex Halliday, Ruth DeFries, Maureen Raymo, and Jason Bordoff. Alex Halliday has assumed the role of Founding Dean, while Ruth DeFries, Maureen Raymo, and Jason Bordoff have each assumed roles as Co-Founding Deans. (See appendix for biographies.)

Their leadership of the Climate School is an addition to their existing portfolios, all of which are integral to the school itself, with Dr. Halliday and Dr. Raymo directing the Earth Institute and Lamont-Doherty Earth Observatory, respectively. Each of these individuals brings unique and complementary areas of expertise to this endeavor and will be working closely over the next months and years to develop and execute the design vision presented in this document.

The Founding and Co-Founding Deans will work collaboratively to lead the school. Each dean brings a unique perspective and skillset and the school will benefit from having four strong leaders work together and complement each other.

1.2. Administration

The Climate School incorporates the Earth Institute and its units, including the Lamont-Doherty Earth Observatory (LDEO). As such, it draws upon their existing robust administrative structures, including comprehensive units for finance, human resources, information technology, and facilities, as well as development, communications, and research and educational support. Under the leadership of Senior Associate Dean for Finance and Administration, Alicia Roman, the Climate School is reorganizing these existing units to better serve and support the needs of a School, while ensuring the existing units of the Earth Institute continue to receive the services and resources they need to succeed. This will include key new hires, such as a Director of Facilities and an Associate Dean for Diversity, Equity, Inclusion and Antibiases. In addition, with respect to education and students, GSAS and the Climate School entered into an MOU such that GSAS will continue to provide certain administrative and student support services for the MA in Climate and Society Program until the Climate School has built out those systems on its own.

2. Faculty

The initial faculty of the Climate School will include the four deans:

- Alex Halliday, Founding Dean, Columbia Climate School
- Ruth DeFries, Co-Founding Dean, Columbia Climate School
- Maureen Raymo, Co-Founding Dean, Columbia Climate School
- Jason Bordoff, Co-Founding Dean, Columbia Climate School, and

the President, the Provost, and Jeffrey Shaman, Professor of Environmental Health Sciences (in the International Research Institute for Climate and Society/ Earth Institute), who will serve as Senior Associate Dean for Faculty Affairs. These faculty will retain their home department appointments.

The Climate School does not expect to hire faculty with primary appointments in the Climate School during the 2021-22 academic year, and there is an expectation of hiring one to two faculty with primary appointments by July 1, 2022 to begin in academic year 2022-23. Beyond that, faculty appointment and recruitment will depend on the Faculty Hiring Plan, which is presently being developed, and ongoing fundraising to support that Faculty Hiring Plan. The Climate School will work closely with the Office of the Vice Provost for Faculty Affairs to ensure alignment with University rules of appointment.

Climate School faculty will consist of tenured and tenure-track professors as well as professors of practice, lecturers in discipline, and adjuncts, principally from research officer tracks. A final faculty size or number has not been determined as this depends on student programs and fundraising. It currently is estimated that 70 to 75 percent of faculty hired will be tenured or tenure track. Ultimately, this will be guided by the Faculty Hiring Plan once completed. All faculty titles will be in line with University policy.

Faculty responsibilities and expectations will be outlined in the Climate School Faculty Handbook or similar guiding document, which is yet to be developed. Responsibilities will include teaching and student mentoring, research and participation on committees. Some individuals may also take on leadership roles within the School. All faculty will be expected to participate in the intellectual life of the School.

Any subsequent faculty appointments will be determined in the coming years through discussions between faculty, their departments, and their deans, and will be contingent upon hiring priorities developed in the coming year and funds raised to allow a revenue neutral or positive expansion of the faculty size.

2.1. Joint Appointments

Consistent with existing processes, joint appointments with other University schools and departments will be reflected in a memorandum of understanding (MOU). This would be for both faculty new to the University and for existing University faculty.

The Climate School will develop a template MOU (provided by the Provost's Office) for joint appointments which addresses the following:

- tenure (following University tenure guidelines);
- funding exchanges between the Climate School and the other school/ department;
- teaching responsibilities at the Climate School and the other school/ department;
- arrangements with respect to PhD students and their funding (Note: All PhD students will continue to be part of GSAS but may work with Climate faculty and in Climate School programs);
- Climate School committee activity;
- the Climate School program(s) they are affiliated with;
- any ICR split for grants raised during the joint appointment, if relevant;
- any other resources that are provided by the Climate School or the other school/ department, including space or lab equipment;
- if applicable, activity they are released from at the partnering school/ department (teaching, committees, etc.).

2.2. Faculty Governance

The Climate School aims to establish its leadership, governance and its faculty within the rules and guidelines set by the University. Subject to all University requirements, the Climate faculty will establish a process to review recommendations for promotion and tenure, and degree programs and courses.

The School will also establish the Climate Council comprising administrators, faculty and officers of research. The Council will focus on strategy, resource allocation, and other items of concern to the School. The Climate Council will be developed with inclusive representation and foster engagement across the University.

3. Student Body

The initial student body will be composed of those enrolled in the MA in Climate and Society. In September 2021, the School welcomed a cohort of 87 students into the Climate and Society program. These students come from all over the world, though a majority are from the United States; three are first generation college students. Roughly one third come from an earth sciences/environmental sciences background, 10 percent come from other areas of the natural sciences, and about half are from the social sciences and humanities (broadly defined).

Other affiliated Earth Institute (EI) program students (roughly 750) will continue to be housed and supported primarily by their respective schools. However, those students do also receive significant support. Consistent with its guiding foundations, the School will continue the work of the EI and aim to amplify that which already exists to include students from all affiliated programs in a wide range of academic, professional, social and planning spheres. Currently, this includes, but is not limited to, co-

curricular activities, events, internships, research assistantships, travel funding, professional development support, spaces to meet, an annual “All Ivy” career fair run by the Earth Institute but with the involvement of other universities. The Climate School will continue to provide the services and supports for these programs and will expand those activities. The Earth Institute education programs, co-run with other Schools, are outlined later in this document. Together, these programs provide a rich, interdisciplinary, cross-school environment for the students.

Lastly, as the Climate School develops, it aims to serve as a hub for all Columbia students interested in climate or sustainability and to provide a community of students, faculty, and researchers with common interests, subject wise. In talking with students who study in climate and sustainability programs across Columbia, it is apparent that a central hub for convening, networking and coordinating would be welcome. This is viewed as one key benefit of establishing the Climate School; it will support students across Columbia.

4. School Structure and Functioning

The Climate School will have a networked structure that connects and catalyzes distributed activities and supports individuals and groups across Columbia. Every Columbia school has some level of climate-relevant research and education. To harness this diversity of academic power and to have the University plan and function strategically in terms of its evolving footprint in this area, there needs to be a stronger degree of networking of currently fragmented activities. The School will create an intellectually integrated academic center at the University, connecting, amplifying, and advancing the extensive and impressive work currently undertaken at the University on climate education, research, and solutions.

To facilitate this, the Climate School will bring together for the first time in a school, much of Columbia’s world-leading climate-relevant activities. This includes the Earth Institute centers, which do not currently sit in any school and will immediately give the School scale. The School will facilitate coordinated strategic development of subjects and inclusion of new fields and faculty.

Therefore, the Climate School will be fundamentally interdisciplinary in nature, with the following broad structure:

- a hub of existing and new faculty, staff, researchers, students and research, education and impact programs;
- connected via networks, shared strategic capabilities, joint appointments, interdisciplinary appointments, projects, education programs and communication vehicles to:
- a range of existing and new faculty, staff, researchers, students, and existing programs that are distributed across the entire university in current schools.

4.1. Academic Themes and Programs

The Climate School will have a clear academic organizational structure defined by academic themes¹.

1. Predicting and Adapting to Future Climate
2. Carbon-Neutral Economy
3. Earth Fundamentals
4. Resilient Ecosystems
5. Climate and Social Systems
6. Climate Justice and Equity

Climate School themes define areas of common intellectual interest and strategic thinking around a defined interdisciplinary subject – what needs building and strengthening in the long-term - across the University, not just within their own academic unit. The themes will provide a foundation for planning how Columbia advances relative to its peers and sets long-term priorities in these fields. Each will provide a basis for establishing academic hiring priorities and building a pipeline of junior scholars. Some of these themes are too broad for this purpose and Programs will be established within them for more focused attention to specific areas and activities. These may be more time-bound and project-focused. The themes are not meant to be equal in scale or scope and are fluid, such that they may change over time.

4.2. The Earth Institute and the Lamont-Doherty Earth Observatory

The Earth Institute, including the Lamont-Doherty Earth Observatory, is an umbrella organization of multiple research centers as well as education programs spread across the University, all of which will move into the Climate School. Earth Institute-affiliated research centers, whose administrative home is another school, will be jointly affiliated with the Climate School. The education programs that the Earth Institute co-sponsors, and that are delivered by both Earth Institute researchers and faculty at other schools, will become education programs co-sponsored by the Climate School but remain offered by their primary school. Their curriculum will not change, nor will the support the Earth Institute provides to those schools for the management of those programs.

The interdisciplinary role that the Earth Institute plays for the University will continue as part of the distributed/network activity of the Climate School (e.g. postdocs, seed funding, research assistantships, internships, interdisciplinary research facilitation, etc.).

All research officers at the Earth Institute, including those at the Lamont-Doherty Earth Observatory will have primary research appointments in the Climate School. Historically, the Institute and Observatory have not been situated inside a school, so no research officer scientists have officer of instruction appointments, except adjunct ones. In certain cases, research officers have secondary adjunct appointments in other parts of Columbia if they have existing arrangements to teach in those schools (DEES, SPS, SIPA). We expect that a subset of Lamont Research Professors and other research officers

¹ It will not have departments, similar to Business, Journalism, Law, and SIPA.

at the Earth Institute, may be considered for officer of instruction positions in the Climate School, subject to a process that will be developed by the Climate School and the Provost's Office.

5. Degrees

5.1. Current Degree Programs

Initially the Climate School will be authorized to confer the Master of Arts degree in Climate and Society only. No other degree currently affiliated with the Earth Institute will move into the Climate School. While those degrees will have support from the Climate School, no changes to those degrees are initially being made, and they will remain housed in their existing schools. By nature of the Earth Institute moving into the Climate School, these programs will have an affiliation with the Climate School.

For reference, these are listed below:

1. Undergraduate Program in Sustainable Development (College & GS)
2. MPA Environmental Science & Policy (SIPA)
3. MPA Development Practice (SIPA)
4. MS Sustainability Management with affiliated certifications (SPS)
5. MS Sustainability Science (SPS)
6. PhD Sustainable Development (SIPA/GSAS)

In addition to the above, there is a long-standing close relationship between the Lamont Doherty-Earth Observatory and the Department of Earth and Environmental Sciences (DEES). The DEES programs do not have a formal affiliation, but are very closely associated with Lamont, and in the case of doctoral students, are embedded in Lamont labs and advised by many Lamont scientists. Lamont Research Professors, holding faculty appointments in DEES, teach undergraduate and graduate courses in DEES.

The School will expand existing and establish new education programs. All new programs would be grounded in market demand and professional pathways for graduates and be subject to University, including University Senate, and New York State Department of Education review.

The MA in Climate and Society, previously offered through the Graduate School of Arts and Sciences, will be offered through the Climate School as of Fall 2021. The Climate School will significantly expand the one-year M.A. Climate and Society program. The inaugural class entering September 2021 has 87 students, more than double the typical 35 to 40 student cohort. The program will develop new elective courses and will consider curriculum needs for this program alongside new degrees in development.

5.2. New Degree Programs

Any new Master's degree programs at the Climate School will require review and approval by the School's Committee on Instruction (to be formed), the Dean(s), the Provost, the University Senate and New York State. The Climate School will work closely with the Office of the Vice Provost for Academic Programs to ensure alignment with University, State and federal guidelines. Consistent with University practice, the Committee on Instruction would be responsible for overseeing the entire curricular portfolio of the school with respect to quality, coherence, and appropriateness. In time, new programs will be developed and guided through the aforementioned reviews.

As new education programs are developed, careful consideration will be given to existing programs at Columbia. It is important that those programs continue to succeed and are, in fact, strengthened by the existence of the Climate School. The Climate School should give them greater visibility and allow them the opportunity to expand, while also filling educational gaps at Columbia with new programs.

5.3. MS in Climate

Subject to all required approvals, the Climate School will seek to develop a Master of Science degree in Climate. The MS program should be designed around interdisciplinary core competencies for all students and allow students to specialize through a modular approach. The creation of additional new Masters degrees will be considered and evaluated over time. The Climate School may partner with other schools to offer joint or dual degrees, certificates, or concentrations/specializations, as appropriate.

The curriculum development for the MS is still in its early stages. The faculty planning group is considering developing the new MS by building on the strengths and 16-year history of success of the MA in Climate and Society. A key element of this path could be to merge the MA in Climate and Society into an MS, amplifying and expanding the current curriculum, and adding tracks to what would be a second year of the program. The current plan would also include maintaining a one-year path. One possibility is that a single MS would emerge as the banner or flagship program for the Climate School in 2024.

The MS in Climate will be designed with a focus on fundamental aspects and practical skills that contribute to understanding, quantifying, communicating, and addressing the risks of climate change. The program will be rooted in interdisciplinary approaches and cross-sectoral perspectives relevant to climate change. It will be innovative and transformative, with the goal to provide students with expertise and skills required to address the climate challenge now and into the future. Faculty in the Climate School will be heavily involved in both designing and teaching in this program.

While the MS program is still in conceptual development, the basic structure will include a few key elements. First, the program will have a core curriculum based on a set of aligned core competencies, to provide students with a shared foundation of climate knowledge. The core will include climate dynamics/fundamentals, quantitative methods, climate management and adaptation, carbon mitigation, climate justice, and communications. Students will complete the core in the first 1-2 semesters of study.

A few courses (e.g., climate fundamentals; managing and adapting to climate) will be required for all students, with flexibility built into other areas (e.g., quantitative methods) to accommodate incoming students with varying levels of knowledge and exposure.

After completing the core, students will select a track, or specialization, to develop domain-specific skills. Initial tracks may include Energy, Climate Justice, Climate Fundamentals, Climate and Health, and/or Climate Finance. In alignment with the school's hub and spokes model, the tracks will be offered by the Climate School in partnership with other schools or departments at the University. For example, Climate Finance would be offered in partnership with the Columbia Business School; the Climate and Health track would be offered in partnership with the Mailman School of Public Health. Discussions with schools are underway to work out appropriate arrangements, such as cross-registration, revenue-sharing, and other logistics. Students will also have the option to take elective courses in areas of their choosing.

As the core and tracks come into detailed focus, the School is also exploring a wide range of pedagogical approaches to amplify learning across a number of dimensions and to prepare graduates to be active agents of change in any setting. These include but are not limited to cohort-based learning models, case-based teaching, innovation in technology, hybrid and online modalities and threading interdisciplinarity and climate justice throughout every aspect of the program.

A defining feature of the MS in Climate will be an emphasis on practical, hands-on experiences in professional settings to prepare students for careers. Students will complete an internship or fieldwork experience in the summer semester between the first and second year. Applied and experiential learning experiences allow students to develop, manage, evaluate, or lead evidence-based climate-related projects. A capstone or culminating project will also be required to complete the program.

5.4. Ph.D. Programs

Developing a new interdisciplinary Ph.D. program within the next three to five years will be a key priority for the School. As with all Ph.D. programs, the degree would be granted by the Graduate School of Arts and Sciences.

5.5. Undergraduate Programs

The Climate School does not plan to grant its own undergraduate degree or directly enroll undergraduate students. Instead, it will continue to partner with Columbia College and General Studies, as with the existing undergraduate program in Sustainable Development. The School will explore additional ways to expand the existing program to add climate-related coursework, and partner with other departments and schools on interdisciplinary climate-related majors, including the Climate and Civilization major under development with DEES.

5.6. Non-degree programs

The Climate School may also offer executive education programs including certificates and certifications of professional achievement, subject to all required approvals with the University, the University Senate, and New York State. The Climate School will seek to develop certifications of professional achievement in climate and related areas, available to Columbia and non-degree students.

The School will also offer professional training and capacity-building workshops in climate literacy for participants ranging from primary and secondary school through corporate and non-profit leaders. These programs and partnerships serve a fundamental purpose by enabling the Climate School to engage beyond the university with the community, the public and private sectors, advocates, non-governmental organizations, and other lifelong learners, with the central tenet that such interactions enlarge traditional research and educational programs through collaborations.

6. Facilities

The Climate School will create an intellectually integrated academic center at the University, connecting, amplifying, and advancing the extensive and impressive work currently undertaken at the University on climate education, research, and solutions, while serving as an innovation hub to spark new areas of inquiry and research. Central to serving as a hub around climate will be a dedicated physical space for an immersive, interdisciplinary experience. Given the breadth and nature of fields and areas of study within the University, it is critical that the School provide a central academic home from which to massively expand the subject of climate change in a strategic, cohesive manner. In time, this will also manifest as a defined and recognizable physical presence that supports interactions and socialization for research, education, outreach, and impact. Such a physical space will be important to facilitate the regular networking and community-building across the University that will be needed to understand new problems that will emerge and to creatively address them.

Investing in new and renovated buildings for the School are among the School's top priorities, including for fundraising. The vision is eventually to have a major new building in Manhattanville that provides new lecture theaters, seminar rooms and other convening, interaction and classroom space, to house our developing degree and non-degree education programs, and host major meetings on issues to do with sustainability and the planet. This is in addition to shared and individual office spaces for students, faculty, researchers, visitors, staff and some Earth Institute and affiliated centers. This creation of an immersive academic ecosystem, close to other Manhattanville and Morningside buildings, is viewed as critically important for the development of the School. The Manhattanville building will also offer the opportunity for direct engagement with the City and in particular the Harlem/West Harlem neighborhood, with the ground floor open to the public. This is consistent with the School's goal of framing the climate crisis and solutions in the context of communities, social justice and the co-creation of knowledge.

In the short-term, the School is utilizing space in the Forum on the Manhattanville campus for both faculty and staff offices and classrooms, while also utilizing classroom space from DEES, negotiated as part of their continuing administrative support for the degree.

The Climate School also has a very significant amount of space in the form of Columbia's Lamont campus, which is utilized by some Earth Institute centers, most notably the Lamont-Doherty Earth Observatory, which oversees most of the upkeep and administrative functioning. This beautiful campus has many well-established research facilities, as well as office accommodation, lecture theaters and other interaction space. The majority of Earth Institute researchers are based there, and it provides the key geoscience research capabilities for Arts and Sciences (overwhelmingly those in DEES) and their students. It provides the Climate School, and the wider Columbia community, with ample opportunity for expansion, particularly for research facilities that are harder to establish downtown, and as a place to hold retreats. For example, it will soon be hosting facilities associated with a new faculty hire for SEAS who works on decarbonizing buildings. Finally, it also provides a very successful and attractive venue for public engagement, including open days, summer programs for high school students, and executive education.

Both campuses will require investment for the expanding educational and research programs of the Climate School.

7. Fundraising

Lastly, major fundraising for the School will be expanded, more fully deploying the Founding and Co-Founding Deans to this immense effort. The Deans are working closely with the Office of Alumni & Development, the School's own development office, and the School's external Columbia Climate Board of Advisors to refine a comprehensive fundraising strategy for the short, medium, and long term. The four main categories for fundraising include:

- a. *Faculty and personnel.* The Climate School will be raising resources for hires in developing areas, but also strengthening the support base for existing research personnel.
- b. *Buildings and facilities.* This will be dominated by the infrastructure needs for Lamont and Manhattanville, as outlined above, but will also include new research facilities.
- c. *Education and scholarships.* A key fundraising priority is to raise funds to provide need-blind admission to the Climate School. This is seen as critical if we want the education programs to have global reach and to support those in the developing world.
- d. *Programs including research and impact capabilities.* These will be partially focused on trans-disciplinary research priorities such as decarbonization, food security, coastal resilience and disaster resilience more broadly. However, the Climate School also will focus on cross-cutting subjects that need establishing such as climate justice, climate finance and climate modeling. Finally, the School intends to develop or expand platforms for achieving greater 4th Purpose impact, such as a climate policy hub.

Within each of these areas, the deans are establishing strategic priorities that will evolve over time. A key goal is to expand areas that are critical for better addressing the evolving climate crisis and related issues, while strengthening our existing research, impact and education base.

8. University Senate Review Process

Three committees of the University Senate – Education, Faculty Affairs, and Research Officers – reviewed the School proposal in spring and summer of 2021. Over the course of the discussions, the Committees posed a series of specific questions regarding the School’s pedagogical, research, and faculty programs, which were answered in detail and with candor to the satisfaction of the Committees.

The University Senate will continue to engage with the School on a regular basis as part of its statutory duties, including, but not limited to, the following:

- Any new degree program proposed by the school will be reviewed by the Education Committee;
- The School’s Faculty Hiring Plan will be shared with the Faculty Affairs Committee upon finalization.

In addition to the above, and in light of the exciting opportunity this initiative represents, the appropriate committees of the University Senate will invite the School leadership to provide regular updates as the School ramps up operation. These updates may be concurrent with major developments and should be no less than once a year for the first five years, in accordance with the timeline below.

Moving Forward / Future: Proposed Timeline

Year 1:

Education

- Launch at least two to three new courses for the MA (approved through GSAS)
- Expand opportunities for student research and impact activities
- Develop curriculum for new degrees
- Serve as hub for students interested in climate across Columbia

Research

- Establish Office of Research
- Nurture and support new and emerging partnerships.

Years 2-5:

Education

- Launch Masters and doctoral programs
- Raise scholarships to attract diverse cohorts into climate careers

Research:

- Launch at least four major transdisciplinary projects guiding strategic investments in people, resources, and hiring
- Expand LDEO and EI post-doctoral programs to support transdisciplinary initiatives
- Support ambitious pursuit of major interdisciplinary center grants from foundations and agencies

Year 10:

Education:

- Establish education of students in climate across multiple degrees
- Alumni are climate leaders across sectors and across the globe
- Columbia Climate School is the premiere school of its kind in the world

Research:

- Global leader in addressing climate change through co-creation of knowledge, policy, and solutions.

Conclusion

The creation of the Climate School will build upon Columbia and the Earth Institute's history of success and commitment to the University's core mission to advance knowledge and learning at the highest level and outreach to New York City, the nation and the world.

Some key milestones and goals that will define success for the Climate School in a decade include:

- Be the go-to institution for climate research, education and impact;
- Secure \$400 million to \$1 billion in new philanthropic funding;
- Secure over \$1 billion in Federal funding;
- Have thousands of alumni transforming the world;
- Zero-carbon sustainable building on Manhattanville;
- Net-zero Lamont campus;
- A model institution for diversity, equity and inclusion;
- Solutions at scale to decarbonize and adapt to climate change;

Columbia University is responding to the urgency of the climate crisis by making the largest commitment a great research university can. Columbia is building an entire school of novel design devoted to tackling this existential threat. The Climate School will advance knowledge across the myriad disciplines needed to tackle the climate crisis; but it will be judged as successful not just by its research and many highly educated and successful alumni, but also by the degree to which it can turn knowledge into action. The goal is that the Climate School will be used by public and private sector leaders to create a more sustainable, just, and safer future for the world. It will develop innovative programs to educate society at large and train tomorrow's leaders in how to curb and cope with climate change.

The Climate School's mission is urgent, which is why it is being built as fast as possible, deploying modelers, social scientists, geoscientists, law professors, engineers, economists and others from across Columbia and beyond to swiftly respond to this unprecedented challenge. The Climate School will change Columbia, in terms of what it achieves and how it functions, and by strengthening existing schools. It will not just facilitate a wide range of new programs to co-develop. It will also establish a powerful recruitment magnet for existing schools as they seek to expand their own programs.

Appendix

Deans' Biographies

Alex N. Halliday, Founding Dean

Director, The Earth Institute, Columbia University

Professor, Department of Earth and Environmental Sciences

Alex Halliday joined Columbia in April 2018, after spending more than a decade at the University of Oxford, during which time he was dean of science and engineering.

With 400 published research papers, Halliday has been a pioneer in developing mass spectrometry to measure small isotopic variations in everything from meteorites to seawater to living organisms, helping to shed light on the birth and early development of our solar system, the interior workings of the Earth, and the processes that affect Earth's surface environment.

His scientific achievements have been recognized through numerous awards, including the Murchison Medal of the Geological Society, the Bowen Award and Hess Medal of the American Geophysical Union, the Urey Medal of the European Association of Geochemistry, the Oxburgh Medal of the Institute of Measurement and Control, and a Knighthood for services to science and innovation. He is a Fellow of the UK's Royal Society and an International Member of the US National Academy of Sciences.

Halliday has helped to lead a variety of distinguished scientific societies and advisory panels. He is the former Vice President of the Royal Society and former President of the Geochemical Society, the European Association of Geochemistry, and the Volcanology, Geochemistry and Petrology Section of the American Geophysical Union. He has served as an external board member for Britain's Natural Environment Research Council, the Max Planck Society, London's Natural History Museum, the American Geophysical Union, and more.

As a professor in Columbia's Department of Earth and Environmental Sciences, Halliday divides his time between Columbia's Morningside campus and his isotope geochemistry lab at Lamont-Doherty Earth Observatory.

Maureen Raymo, Co-Founding Dean

Director, Lamont-Doherty Earth Observatory

G. Unger Vetlesen Professor, Department of Earth and Environmental Sciences

Maureen “Mo” Raymo is a marine geologist and climate scientist who works at Columbia University’s Lamont-Doherty Earth Observatory (LDEO) where she is the G. Unger Vetlesen Professor of Earth and Climate Sciences as well as the Director of the Lamont-Doherty Earth Observatory, the first climate scientist to lead the Observatory. Raymo’s research focuses on the history and causes of climate change in the past, including understanding the consequences of climate change for future sea level and ice sheet stability. Her research has been profiled in numerous publications including *The New York Times*, *The Washington Post*, *The Atlantic*, *The New Yorker*, *U.S. News and World Report*, *Discover Magazine*, as well as featured on the History Channel, BBC World Service, BBC’s Planet Earth, and PBS Newshour. Her Uplift-Weathering Hypothesis that addresses why climate changes on geologic timescales was the subject of both a PBS Nova and BBC Horizon documentary.

Raymo has spent months at sea and in the field, planning, leading and participating in numerous scientific expeditions. She has authored or co-authored over 100 peer-reviewed scientific articles, including 12 in *Science* or *Nature*. Her book, *Written In Stone - A Geological History of the Northeastern United States* has been continuously in print since 1989. Maureen has given hundreds of invited science presentations and spoken to dozens of public audiences about climate change.

Mo Raymo is an elected fellow of the National Academy of Sciences, the American Association for the Advancement of Science, the American Geophysical Union, The Geological Society of America, The Geological Society of London, and The Explorer’s Club. In 2014, she became the first woman to be awarded the Wollaston Medal, The Geological Society of London’s most senior medal previously award to Charles Lyell, Louis Agassiz and Charles Darwin. She was awarded the Maurice Ewing Medal by the AGU and U. S. Navy “for significant original contributions to the ocean sciences” and the European Geosciences Union, upon recognizing her accomplishments with the Milankovic Medal, wrote “Maureen E. Raymo’s work has given names to critical, foundational ideas: the ‘uplift-weathering hypothesis’, the ‘41-thousand-year problem’, ‘Pliocene sea level paradox’, and ‘the Lisiecki-Raymo $\delta^{18}O$ Stack’ are all central themes in palaeoceanography that appear in textbooks and have their roots in Raymo’s research and intellectual contributions.” Maureen’s work, firmly based on observations and data, has shaped our understanding of Earth’s natural climate variability and her many landmark papers have influenced a generation of climate scientists.

Raymo currently leads the Lamont-Doherty Earth Observatory where she manages more than 500 employees and an annual budget of US\$77 million. The Observatory supports the research and educational mission of nearly 100 Columbia University faculty, ~50 post-doctoral scholars, as well as ~90 graduate students enrolled in a doctoral program that is consistently ranked number one in the nation. Twelve

members of the National Academy of Sciences make their professional home at Lamont on 168 mostly-wooded acres atop the Mesozoic Palisades Sill overlooking the Hudson.

Jason Bordoff, Co-Founding Dean

Professor of Professional Practice in International and Public Affairs

Founding Director, Center on Global Energy Policy

Jason Bordoff is Co-Founding Dean of the Columbia Climate School, Founding Director of the Center on Global Energy Policy, and Professor of Professional Practice in International and Public Relations at Columbia SIPA. Bordoff joined the Columbia University faculty after serving until January 2013 as Special Assistant to President Barack Obama and Senior Director for Energy and Climate Change on the Staff of the National Security Council, and, prior to that, holding senior policy positions on the White House's National Economic Council and Council on Environmental Quality. One of the world's leading energy and climate policy experts, Bordoff's research and policy interests lie at the intersection of economics, energy, environment, and national security. He has written prolifically about how to address our greatest energy and climate change challenges and has developed innovative programs and tools to train future leaders to bridge the gap between academic research and policy, focused on delivering research insights in formats and timeframes that are accessible and useful to decision-makers outside of academia.

Ruth DeFries, Co-Founding Dean

University Professor

Denning Family Professor of Sustainable Development

Ruth DeFries is a professor of ecology and sustainable development at Columbia University in New York. She uses images from satellites and field surveys to examine how the world's demands for food and other resources are changing land use throughout the tropics. Her research quantifies how these land use changes affect climate, biodiversity and other ecosystem services, as well as human development. She has also developed innovative education programs in sustainable development. DeFries was elected as a member of the U.S. National Academy of Sciences, one of the country's highest scientific honors, received a MacArthur "genius" award, and is the recipient of many other honors for her scientific research.

DeFries is committed to linking science with policy, for example through her involvement with the Environmental Defense Fund, Science for Nature and People, World Wildlife Fund, and reconciling conservation and development in central India.

**RESOLUTION TO AMEND THE UNIVERSITY STATUTES
TO ENABLE CLIMATE SCHOOL REPRESENTATION IN THE UNIVERISTY SENATE**

BE IT RESOLVED that the Senate approve the revisions to the University Statutes to enable Climate School representation in the University Senate, as set out, below.

II THE UNIVERSITY SENATE

§20. Membership The University Senate shall be a unicameral body whose membership shall be composed of representatives from the following categories:

a. Administration members

1. The President
2. The Provost (or if there is more than one Provost, the Provost designated by the President)
3. The dean of the Faculty of the Graduate School of Arts and Sciences
4. The dean of Columbia College
5. Five members, who shall be appointed by the President, from among officers of administration who are part of the central administration and administrators of Faculties

b. Faculty members

1. Forty-~~two~~-~~three~~ officers of instruction having an appointment without stated term as professor or associate professor as defined in Sections 60 and 61, to be elected from and by such officers of instruction, subject to the provisions of Section 21
2. ~~Sixteen~~-~~Seventeen~~ officers of instruction having an appointment for a stated term as defined in Sections 60 and 61 to be elected from and by such officers

c. Student members

Twenty-~~two~~-~~three~~ students as defined in Section 381 to be elected from and by such students as provided in Section 21, one student from Barnard College to be elected from and by the students of

Barnard College as provided in Section 21, and one student from Teachers College to be elected from and by the students of Teachers College as provided in Section 21

d. Affiliated institution members

1. Two representatives of the faculty of Barnard College
2. Subject to renegotiation of the existing affiliation agreement with Teachers College, two representatives of the faculty of Teachers College
3. Subject to renegotiation of the existing affiliation agreement with the Union Theological Seminary, one representative of the faculty of the Union Theological Seminary

e. Professional library staff members

Two members who shall be elected from and by those persons either holding a trustee or presidential full-time appointment to the professional library service or holding a full-time appointment as an officer of administration within the libraries

f. Research members

Six members who shall be elected from and by those full-time research officers designated as senior research scientist or senior research scholar, Lamont research professor, research scientist or research scholar, Lamont associate research professor, associate research scientist or associate research scholar, Lamont assistant research professor, postdoctoral research scientist, postdoctoral research scholar, or postdoctoral research fellow, senior staff associate and staff associate, as defined in Section 62 of these Statutes, and who are not entitled to vote as officers of instruction

g. Administrative staff members

Two members who shall be elected from and by those persons having an appointment from the President or the Secretary of the University, or who are in Grade VII or above of the University Personnel Classification System for officers of administration and supporting staff and who are not entitled to vote in any other category for members of the University Senate

h. Alumni members

Two members who are either alumni or alumnae shall be chosen by the Columbia Alumni Association

§21. Elections, eligibility, recall, and term of office

a. Election of faculty members

1. The forty-~~two~~-three memberships for officers of instruction having an appointment without stated term as professor or associate professor as defined in Sections 60 or 61 shall be apportioned by the University Senate every five years among the Faculties of the Columbia Corporation in proportion to the number of such officers of instruction. Each Faculty shall be entitled to elect at least one member, except for the Faculties of Columbia College, General Studies, the Graduate School of

Arts and Sciences, the Arts, Professional Studies, and Health Sciences, which shall not be entitled to elect any members, except as specified below. For the purposes of this paragraph (1), and paragraph (2) below, for the apportionment and election of members from the Faculty of Arts and Sciences, each division of the Faculty of Arts and Sciences shall be treated as a separate Faculty. The five divisions of the Faculty of Arts and Sciences are as follows:

i. The Division of the Humanities shall consist of the following departments: Art History and Archaeology; Classics; East Asian Languages and Cultures; English and Comparative Literature; French and Romance Philology; Germanic Languages; Italian; Latin American and Iberian Cultures; Middle Eastern, South Asian, and African Studies; Music; Philosophy; Religion; and Slavic Languages.

ii. The Division of Social Sciences shall consist of the following departments: African American and African Diaspora Studies, Anthropology, Economics, History, Political Science, and Sociology.

iii. The Division of Natural Sciences shall consist of the following departments: Astronomy; Biological Sciences; Chemistry; Earth and Environmental Sciences; Ecology, Evolution, and Environmental Biology; Mathematics; Physics; Psychology; and Statistics.

iv. The School of the Arts.

v. The School of Professional Studies.

2. The ~~sixteen-seventeen~~ memberships for officers of instruction with stated term shall be apportioned by the University Senate every five years among the Faculties of the Columbia Corporation other than the Faculties of Columbia College, General Studies, the Graduate School of Arts and Sciences, the Arts, Professional Studies, and Health Sciences, except as specified below. All such officers of instruction having an appointment as preceptor, associate, lecturer, instructor, and assistant professor, regardless of whether such officers are full time or part time, shall be entitled to vote. Officers of instruction having an appointment with a stated term above that of assistant professor also shall be entitled to vote in this category. For the purposes of this paragraph (2), apportionment and election of members from the Faculties of Arts and Sciences, each division of the Faculty of Arts and Sciences, as specified in paragraph (1) above, shall be treated as a separate faculty.

b. Election of student members

The twenty-~~four~~-~~five~~ memberships for full-time students shall be apportioned by the University Senate every five years as follows: twenty-~~two~~-~~three~~ among the Faculties of the Columbia Corporation; provided, however, that at least one student member shall be elected from each Faculty other than the Faculties of Arts and Sciences and Health Sciences; two additional student members shall be elected from the Faculty with the largest number of full-time students; one additional student member shall be elected from each of the Faculties with the next largest number of full-time students; until the limit of twenty-~~two~~-~~three~~ student seats for the Columbia Corporation is reached; one full-time student member shall be elected from Barnard College; and one full-time student member shall be elected from Teachers College. For the purposes of this subsection (b), the Faculty

of the Graduate School of Arts and Sciences shall be treated as consisting of three separate Faculties, comprised of the divisions of the Humanities, Social Sciences, and Natural Sciences, respectively, as specified in paragraph (a.1) above. Students here are defined to include all those seeking degrees and all those non-degree-seeking students who have been designated as members of constituencies by the Senate By-Laws.

c. Election of members from professional library staff and administrative staff

Two members shall be elected from and by the professional library staff and administrative staff.

d. Election of members of officers of research

The six memberships for officers of research shall be elected as follows: four shall be elected from officers of research members designated as senior research scientist or senior research scholar, Lamont research professor, research scientist or research scholar, Lamont associate research professor, associate research scientist or associate research scholar, and Lamont assistant research professor; one additional research officer member shall be elected from those persons designated as postdoctoral research scientist, postdoctoral research scholar, or postdoctoral research fellow; and one additional research officer member shall be elected from those persons designated senior staff associate or staff associate.

e. Representatives from affiliated institutions

Each of the affiliated institutions shall choose representatives from among their respective Faculties to serve as members in such manner as each of them may determine.

f. Direct and indirect elections

All members elected under subsections (a), (b), and (c) shall be chosen by direct election, except that student members may be chosen by indirect election as hereinafter provided. If the indirect election method is chosen, then the student member of the University Senate shall be elected by the elected student governing body of the Faculty from which the student member of the University Senate is being chosen. Such choice shall be exercised only by a referendum of the students within such Faculty and shall stand unless and until reversed by a succeeding referendum. If there is no elected student governing body of the Faculty which is authorized to hold indirect elections, and if either a seat assigned to a student member has remained vacant for six months or longer, or elections have failed to fill such a seat, then a member may be elected from one or more departments within that Faculty in rotation, as may be prescribed by the body designated of the University Senate, to administer University Senate elections.

g. Time of election and term of office

There shall be two regular election periods each year, one in the spring and one in the fall. The

regular term of office for each member shall be as follows:

1. For each member elected in the spring elections, the term of office shall begin fourteen days before the day of Commencement next following his or her election and shall be for two years; provided that a member elected to a vacant seat shall assume office immediately; and provided further that if the spring elections are not completed by the date set for the beginning of his or her term, the member shall assume office immediately upon the completion of the elections.
2. For each member elected in the fall elections, the term of office shall commence immediately upon election and shall expire fourteen days before the day of the second Commencement next following his or her election.
3. For each appointed member, the term of office shall commence immediately upon appointment and shall expire fourteen days before the day of the second Commencement next following his or her appointment.

It shall be the responsibility of each member to advise the commission supervising elections of members to the University Senate, as early as possible, if he or she will be unable to serve his or her full term. When such commission is so advised, provision will be made to vote, at the next election, for a member to fill the anticipated vacancy. The term of such member shall be the same as that of all other members elected in the same election period, except that if the seat is occupied at the time of election, the term shall commence upon the effective date of resignation of the retiring member. Except as provided in subsection (f), any vacancy occurring between election periods shall be filled in the same manner in which the original member was chosen, and the term of office for each member so elected shall commence immediately upon election and shall expire fourteen days before the day of the second Commencement next following the election. The Executive Committee of the University Senate may designate a date for the expiration of terms and beginnings of new terms different from the date set herein, if such a redesignation is necessary to allow for an orderly transition of the work of the University Senate from one session to the next. No person shall be disqualified from election because he or she will be a member of the category from which he or she is elected for less than two years. However, his or her membership shall terminate when he or she is no longer a member of the category from which he or she was elected.

h. Recall

Every elected member shall be subject to recall. Upon petition signed by one-fourth of the number of members of the category from which the member was elected, a recall election shall be held. A majority of votes cast for recall shall cause the recall of the member and his or her membership shall thereupon become vacant. The provisions of subsection (f) shall also apply to recall elections.

Proponent: Senate Structure and Operations Committee