



LEAP Facilities, Equipment, and Other Resources

Headquarters. LEAP will be physically headquartered within **Columbia** Engineering's new Research and Education Center for Artificial Intelligence (REC). Within the 10,000 sq ft space on the Manhattanville Campus, the REC commits to LEAP three offices (100 sq. ft. each) and approximately 800 sq. ft. of space for office cubicles (for 10 students and postdocs). This space will house the Center Director, Deputy Director, Managing Director, two administrative staff, and Executives in Residence, along with most LEAP Fellows and postdoctoral researchers. In addition to these dedicated spaces, LEAP will have full access to other shared REC spaces, including a 16-person conference room, multiple smaller breakout rooms, and two large (70+-person) reconfigurable training spaces.

Institutional Support. LEAP advances key research priorities across all partner institutions. All institutions are fully committed to this project, and will contribute the following resources: One Finance & Operations Manager position, one Staff Writer position, three Bridge to PhD postbaccalaureate scholar positions, an Executives in Residence program, a Storytellers in Residence program, one research scientist position, and international travel for **Bengio**. Columbia will provide partial salary support for the Managing Director, Assistant Director, and Program Manager, past what is already budgeted.

Computational Resources. LEAP's two computing company partners - **Google** and **Microsoft** - commit cloud computing credits necessary to fully support and sustain LEAPangeo-based research. **Microsoft** will support operations of holding its AI4Earth conference in New York City. **NYU** will make available 415 compute nodes. **Columbia's** newest and fourth-generation high-performance computing cluster, Terremoto, boasts 110 Dell C6420 nodes with a dual Intel Xeon Gold 6126 Processor (2.6 Ghz). Terremoto's Education Tier will converge with the LEAPangeo platform to support LEAP's new courses.

Unfunded Collaborators: National Labs. Key to LEAP's success are seven unfunded NCAR collaborators (**Gagne, Gettelman, Hamman, Lamarque, Lawrence, Long, Morrison**) and one NASA GISS collaborator (**Schmidt**). Each will co-mentor LEAP Fellows, travel to New York City for Executives in Residence programs, participate on subcommittees, and attend the Center's annual meeting and AI4Earth symposium. **Lawrence** and **Schmidt** will serve on LEAP's Executive Committee.

Unfunded Collaborators: Academic. Six Columbia faculty will be unfunded collaborators: **de la Peña, DeFries, Gelman, Goddard, Rush, and Uriarte**. These six will consult on research methodology design and implementation, attend critical events, and are eligible to apply to supervise LEAP Fellows and for research seed funding. Executive leadership across each partner institution will commit approximately five hours per year towards the Director's Council. Unfunded collaborator **Bengio** will consult on developing physics-guided ML algorithms.

Unfunded Collaborators: Industry. Senior Personnel **Joppa** and **Sukthankar** will serve on the Knowledge Transfer Subcommittee and support LEAPangeo cloud platform development. **Joppa** will supervise the AI4Earth conference in Years 2 and 4.

Unfunded Collaborator: City Government. Senior Personnel **Zarrilli** will serve on the Knowledge Transfer Subcommittee.

Unfunded Collaborator: Not for Profit. Senior Personnel **Newman** will serve on the Knowledge Transfer Subcommittee, and serve as the Spring 2020 Executive in Residence.

Meeting Space and Offices. **NCAR** and **GISS** will provide office space for trainees and for meetings, including providing full IT/ AV support for meaningful collaboration. Simulations with **GISS' ModelE** will be made with facilities provided by the NASA Center for Climate Simulations in Greenbelt, MD. LEAP's faculty each have dedicated office spaces for meetings. Contributing departments and schools across all academic institutions will make meeting spaces available as needed, including 5-, 12-, 25-, 50-, and 150-person rooms with full IT and AV connectivity.