Mission:
The Brazil-Yale Partnership for Global Health is committed to addressing public health challenges in Brazil by sponsoring collaborations that build sustainable research capacity, strengthen the global health network, and train future scientific leaders of Brazil.

Vision and rationale:
Universidade de São Paulo (USP) is the oldest University in Brazil and among the most prestigious institutions of higher education and research Latin America. USP has over 90,000 undergraduate and postgraduate students and 5,900 faculty members representing 42 colleges, 240 undergraduate programs and more than 220 postgraduate programs in all academic areas, delivering 2,300 PhD degrees each year. As a leading academic center, USP is leading Brazil’s emergence as an important global hub of knowledge creation, particularly in the fields of clinical and basic biomedical research. For example, international recognition of Brazil’s successful National AIDS Program affirmed the country’s position as a global leader in public health.

Yale Medical School in New Haven CT one of the world’s leading biomedical research institutions, with more than $500 million USD in external funding received annually to support a broad portfolio of laboratory, clinical, and translational research. Yale investigators have contributed to medical discoveries that have benefited people across the globe, while clinical advances and high impact research activities take place in a wide range of departments, programs, and centers.

The Brazil-Yale Partnership for Global Health was launched in 2009 to foster biomedical research collaborations between scientists at the Universidade de São Paulo and Yale University. Since that time, the Brazil-Yale Partnership has evolved into a highly successful program that mentors and inspires young scientists from Brazil as they pursue advanced careers and leadership opportunities in biomedical research. The program model continues to encourage collaborative initiatives through sponsorship of bi-directional faculty/student exchanges and mentoring of Early Career scientists as they launch careers in research, public health, and medicine.

We believe that sustainable improvements in the health of the people of Brazil can best be achieved through global collaborations that invest in human capital and committed partnerships.

Program Priorities:
Among the most pressing health challenges facing Brazil and developing countries in South America is the lack of effective means to prevent, treat, and monitor emerging infectious diseases. Looking to the future, however, ongoing economic development is expected to increase the impact of chronic non-communicable diseases (NCDs) like cancer, diabetes, and heart disease. These data suggest that Brazil needs a strategy to train research leaders capable of addressing both infectious and non-infectious diseases. With this in mind, and in order to effectively address this challenge to public health, the Brazil-
Yale Partnership actively pursues the following objectives:

➢ To facilitate the development of collaborative research that addresses key global health challenges.
➢ To strengthen scientific and training partnerships that will have sustainable impact, drive innovation and influence public health policy.
➢ To identify and train academic leaders to shape future priorities for public health research in Brazil.

Training leaders in biomedical research:
Yale University launched its partnership with Universidade de São Paulo in 2009. The goal of this collaborative program remains to build sustainable biomedical research capacity and develop future global health leaders. From 2009-2017, the Jorge Paulo Lemann Foundation has sponsored trainees from USP to participate in the Yale Partnerships for Global Health Research Institute, a unique interdisciplinary initiative sponsored by Yale Medical School’s Department of Pediatrics. This intensive 8 week summer program is hosted in New Haven CT and offered to a select group of highly qualified trainees from elite academic institutions around the world. Each trainee is assigned to a senior Yale faculty mentor whose research focus is relevant to the student’s interests and career goals. Lab projects are individually designed to provide experience in state of the art molecular methods and techniques. In addition to individualized training, USP Research Scholars attend weekly seminars and lectures presented by senior Yale faculty, who share perspective and provide valuable career development advice aimed at inspiring students to pursue successful independent careers. Trainees also enroll in formal coursework that is made available through Yale’s Investigative Medicine Program, which provides additional formal training in biostatistics and clinical research methodologies. At the end of the 8 week program, students present a summary of their accomplishments at a full-day symposium attended by faculty mentors and open to all members of the Yale Medical community.

In addition to intellectual stimulation and scientific training, USP students also gain valuable experience and perspective by living on campus and working side by side with students from Yale and other countries, including Ghana, China, Singapore, Australia, and Saudi Arabia. Through this intensive shared experience, these future leaders from Brazil are welcomed into a future global community of young scientists.

Because of the collaborative nature of cutting edge science in this interconnected world, the Brazil-Yale Partnership is providing USP students a critical head start in creating their own global network of future research collaborators.
Fostering collaboration and building capacity:
As described above, USP trainees receive intensive mentoring in the latest biomedical research techniques, as well as develop close relationships with faculty mentors and fellow students. In addition, the Partnership encourage trainees to stay connected to their host laboratory and faculty mentor. This provides opportunities for future career development and creates pathways to develop faculty level collaborations between researchers at Yale and USP. To date, a number of ongoing collaborative projects have been launched by connecting faculty at the two universities, often through the initial co-mentoring of a Research Institute trainee. In this way, the Brazil-Yale Partnership is not only building individual research capacity, but also enhancing the institutional relationship between USP and Yale, creating a productive North-South collaborative enterprise.

In 2011 USP hosted a delegation of 4 Yale faculty at the medical campus in Ribeirao Preto. Over the course of 3 days, Yale faculty engaged in dialogue with USP researchers and participated in a joint symposium. Presentations were delivered by Yale faculty and also USP trainees who had participated in the Summer Research Institute the previous year. In this way, the Partnership was able to raise awareness of this unique opportunity to the entire USP-RP academic community. As a result of this symposium, the number of applicants to the program has significantly increased, making it very competitive and a highly desirable opportunity among USP students.

Collaborative research symposium hosted by University of São Paulo Medical School in Ribeirão Preto, featuring visiting faculty from Yale School of Medicine (Left). Symposium speakers and student presenters gathered for a group photo (Right).
Measuring impact and progress of the Brazil-Yale Partnership:
Since 2009, the Yale Partnership has hosted 33 trainees from Universidade de São Paulo. To gauge our progress, in 2014, we conducted a comprehensive survey of all past participants, in order to identify program strengths and areas for improvement. Overall, trainees from Brazil who participated in the Yale program continued along a positive career trajectory, with 55% successfully completing their PhD studies or gaining a prestigious faculty position at a Brazilian university. Those still in training are pursuing advanced degrees or Post-Doctoral research opportunities at globally recognized institutions, both within Brazil (School of Pharmacy of Ribeirão Preto – USP, School of Medicine Ribeirão Preto – USP, FIOCRUZ) and abroad (Cambridge University UK; Pasteur Institute, France; Cleveland Clinic/Lerner Research Institute, USA). All of the Scholars continue to exemplify the elite standards that have been cultivated through this high impact collaborative program.

Results of our 2014 survey (shown below) revealed an outstanding level of trainee satisfaction in the academic, social, and career development aspects of the program experience. Trainees were especially pleased with the thoughtful mentoring and instruction in new lab techniques, as well as increased level of confidence gained through the program. Respondents also commented on the social activities and logistical support provided by the Yale administrative team. Importantly, the survey identified areas that can be improved. In particular, USP trainees noted that the 8 week fellowship does not always provide enough time to complete an individual research project, and that opportunities for ongoing networking with mentors and colleagues can be enhanced. With this important feedback, the leadership of the Brazil-Yale Partnership will continue to refine and improve the program experience for future participants.

Institutional commitment and priorities:
The Brazil-Yale Partnership for Global Health is extremely grateful for support from Fundação Lemann, which has been a major contributor to the program’s success. Yale and USP also provide substantial institutional support to this unique collaboration. Since its inception, USP has provided travel subsidies and financial contributions that have allowed the program to take 1-2 additional Research Institute participants from Brazil each year. In addition, Yale faculty and research staff fully volunteer their time and expertise in mentoring USP students, lecturing in the seminar series, and engaging in collaborative
discussions with USP faculty. Although faculty mentors receive a small supplement to defray reagent costs, this amount only partially covers the actual cost of hosting a junior scientist for 2 months. Yale also subsidizes the cost of tuition for coursework and provides free training sessions in biosafety, infection control, radiation safety, and animal care. USP trainees are also granted free use of library services, including access to Yale’s vast collection of online journals, books, and digital resources, as well as free Yale shuttle bus and transport services. These in kind contributions highlight the value and importance that USP and Yale place on this growing partnerships between two premiere global universities.

**Future directions and goals:**

Inspiring the next generation of biomedical research leaders is what drives the mission of the Brazil-Yale Partnership for Global Health. The accomplishments described above confirm the success of the Partnership in strengthening the academic infrastructure at Universidade de São Paulo, contributing to the development of its independent research faculty, and enhancing the educational experience of students at USP, Yale and participating universities around the world.

With each successful year, the Program continues to evolve. As we look to the future, the goals of the Partnership include the following:

1. **To continue providing students from Brazil with a unique, intensive research experience under the mentorship of Yale faculty.** We will maintain the high quality of training offered through the Yale Partnerships for Global Health Research Institute, with 3 USP students hosted at Yale each year. In the coming year, we are also exploring ways to sponsor Yale students to visit Brazil for similar training opportunities.

2. **To enhance the level of faculty collaboration between USP and Yale.** This will be accomplished by establishing an annual visiting professorship that will bring a faculty member from Brazil to Yale’s campus. Visiting Professors will spend up to a week in New Haven CT, where they will deliver research seminars, meet with Yale faculty working in related research areas, and identify potential collaborators. Similarly, we will seek to identify opportunities for Yale faculty to visit Brazil each year, so that the number of faculty collaborations can be increased.
Each year, Research Scholars from Brazil bring energy, motivation, and enthusiasm to Yale University.

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