



*The University research unit **CoBTeK-lab***

Missions for the CoBTeK - lab (Cognition – Behavior Technology)

CoBTeK-lab (Cognition Behavior Technology) de l'Université Côte d'Azur a été créée en partenariat avec l'[INRIA](#). CoBTeK a pour objectif de développer des recherches sur l'utilisation des technologies de l'information et de la communication pour la prévention, le diagnostic et le traitement des pathologies neuropsychiatriques et neuro développementales.

C'est dans les locaux du Centre de recherche Edmond et Lily Safra à l'institut Claude Pompidou qu'est située la [plateforme technologique](#) que CoBTeK-lab partage avec les autres équipes de la FRIS.



The CoBTeK lab (Cognition Behavior Technology) of the University Côte d'Azur was created in partnership with [INRIA](#). The main objective is to develop clinical and translational researches using ICT (Information and Communication Technologies) in order to prevent, help to diagnose and assist patients suffering from neuropsychiatric and neurodevelopmental disorders.

CoBTeK-lab share with other FRIS (Federation de recherche pour les Interventions en Santé) teams the technological platform located at the Edmond and Lily Safra research center at the Claude Pompidou Institute in Nice.

Institute Claude Pompidou – a unique place

The main objective of the Institute Claude Pompidou is the promotion of interactions between care, education, research and cultural activities in the heart of the city of Nice. This scientific project should allow an optimal interrelationship between research, new technologies and human sciences by placing the patient and his caregivers at the center of interest. This is possible by integrating in the same building the Resources and Memory Research Centre, the research unit CoBTeK, a nursing home, family associations and accommodation units¹.

The Institute Claude Pompidou's principal objective is to represent a model on different levels: care, research and education at all stages of Alzheimer's disease. The Institute, located in the heart of the city of Nice, offers combined at the same place, all possible information and support for Alzheimer's disease and related disorders.

Research at the Institute Claude Pompidou

The new technologies of Information and Communication Technologies (ICT) are partly employed as assessment instruments as well as instruments to verify and follow up on treatment plans. Thus, ICT have a major role in dependency prevention and the adaptation of urban environments to the needs of the elderly and the preservation of their autonomy.

In order to be a leading actor in research, the Institute Claude Pompidou will house a dedicated team composed of guiding experts in the field: the CoBTeK-*lab* for **Cognition-Behavior-Technology**. This unit is attached to the University of Nice Sophia Antipolis. The association Innovation Alzheimer (IA) supports CoBTeK-*lab*.

The implementation of an interrelationship between Information and Communication technologies required the establishment of a strong partnership between clinical and fundamental research.

As the former research at the hospital, the objective is to bring "fundamental research to the patient's bedside", the objective of CoBTeK-*lab* is to guide this fundamental research as an "algorithm" at the living places of the elderly.

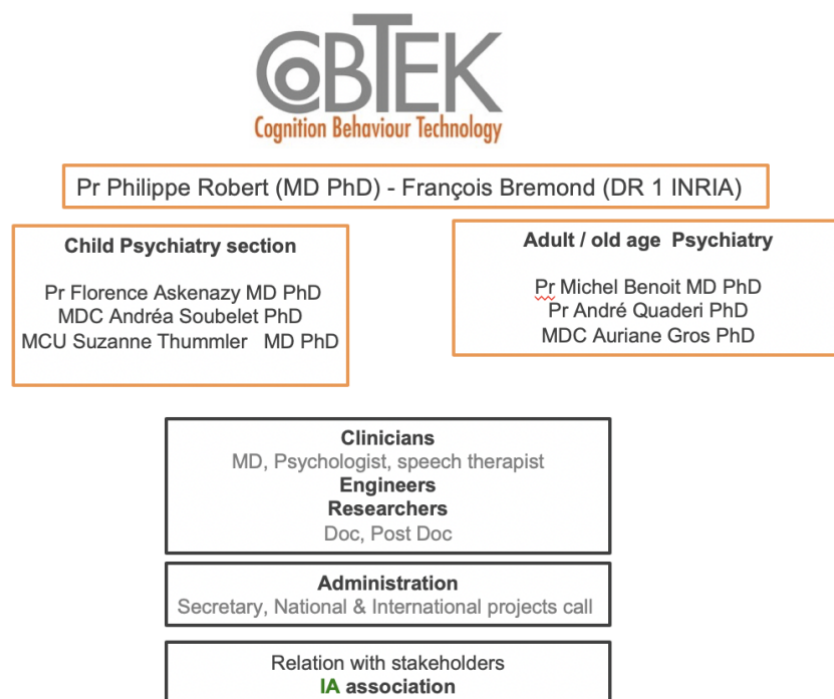
¹ Partners of the ICP: 19 places at the day care center (Alzheimer 06 Family Association)

A residence for autonomy and the integration of people suffering from Alzheimer's Disease 72 beds in Nursing Home (Mutualité Française)

The Research Memory center of the Nice University Hospital, CoBTeK -*lab* and the association innovation Alzheimer

The CoBTeK-*lab* includes experts from both fields: INRIA (National Institute of Research in Computer and automatic Sciences) for the fundamental research and the CMRR (Resources and Memory Research Centre) for the clinical research, in a place that is accessible to everyone: The Institute Claude Pominou.

CoBTeK have also other scientific partners (**IM2A - ICM**– Paris Pitié Salpêtrière, **IPMC**- Sophia Antipolis, University of California San Francisco & Stanford University - USA) and with the help of IA supporting partners (Fondation JL Noisiez, Lions Club and private donators)



CoBTeK-*lab* goals

Key words: Ageing, Alzheimer Disease, Behavioral disturbances – autonomy – perception & analysis techniques for behavior

Normal aging, as well as the spectrum of neurodegenerative conditions such as Alzheimer disease with its accompanying behavioral disturbances, can significantly impact personal autonomy and quality of life. This has major implications for our society as a whole. In this context, the utilization of and help from new technologies are being developed. It is therefore extremely important to develop high-level research into these new technologies, as well as information technology, and to experiment with how they can be adapted to and enhance the lives of the elderly.

In the Alpes-Maritimes, there is already a well-established and dynamic collaboration for Alzheimer disease research between the biological research team (IPMC) and the clinical team (CMRR), namely, the “*bench-to-bedside*” link.

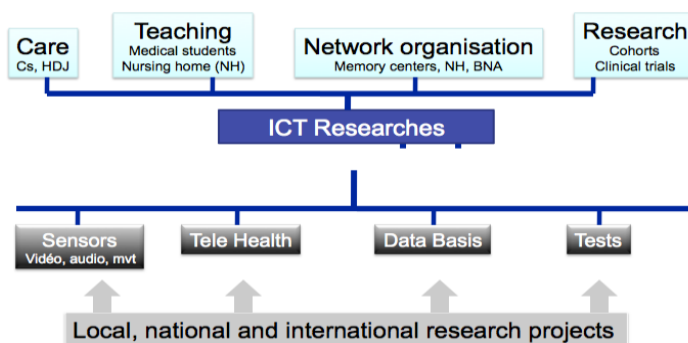
Another important research collaboration/ has been established in the domain of ICT - information and communication technology between technology expert (INRIA The French National Institute for

Research in Computers Science & Control) and clinician. Such an interaction is distinct from the biological-clinical link (“bench-to-beside”) and corresponds instead to an entirely different theme, namely, **“ICT or computer-to-clinic”**.

The establishment of collaboration between information/communication technology (INRIA) and the Alzheimer disease clinical setting (CMRR) requires integration into the overall context of the technological platforms within the university and hospital structure.

The partnership of Engineers (INRIA) and clinician (Memory Center) lead to the development in 2012 of a research unit within the University of Nice Sophia Antipolis. This research group named, CoBTeK (for **C**ognition **B**ehavior **T**echnology), is situated within this context and one of its objectives is to foster interdisciplinary teaching within these new research areas.

The association IA (Innovation & Alzheimer) is included in the economic model of CoBTeK is devoted to the diffusion of innovation to stakeholders supports the CoBTeK unit: <http://www.innovation-alzheimer.fr/>



CoBTeK-lab place at the Institute Claude Pompidou

Within the Institute Claude Pompidou the research area (site of the CMRR, COBTEK and IA) are regrouped under the name of Centre Edmond & Lily Safra:

- Localization: 1st floor
- Surface used for premises of the CMRR: 429.59 m2 SU
- Surface used for internal circulation of the CMRR: 67.55 m2 SU
- Total number of rooms: 18
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CoBTeK- lab Research topics

ICT can be used both for assessment and for stimulation

Examples of the research activities and [scientific publications](#) are available on the web site – Programs / programmes and MNC3 as



CoBTeK lab Neuroscape lab

The activity of COBTEK *lab* focuses on the use of new technologies to facilitate evaluation and treatment of patients suffering from neuropsychiatric disorders.

As part of the university team's installation at the site of the Institute Claude Pompidou a set of sensors on the entire floor as well as a room dedicated to and virtual simulation, sensors assessment and transcranial brain.



CoBTeK lab is in the [Neuroscape alliance](#) In 2019 The CoBTeK *lab* has been updated to be in line with the UCSF [Neuroscape lab](#) . Another technological platform is also available for the children at the Lenval hospital in Nice

