

Ministry of Education Call for Proposals
International Campus of Excellence

**UAB^{CEI}: PROMOTING
KNOWLEDGE, ENCOURAGING
INNOVATION**

UAB^{CEI} PROJECT: DESCRIPTION OF THE PROJECT
(SUMMARIZED VERSION)



Universitat Autònoma de Barcelona

Prologue

The UAB is a young university which has recently celebrated the 40th anniversary of its foundation. During this period, our University has succeeded in establishing itself among the top Spanish universities, in terms of the quality of its teaching, the excellence of its research and results of its transfer of technology and knowledge.

One of the most striking features of the UAB is a campus structure that is unique in Spain, and which constitutes one of its greatest assets. In a single space, faculties coexist with schools, research centres, housing for students and researchers and the services for the entire university community. The UAB offers an extensive range of cultural and sporting possibilities for all its members, and this combination means that the campus is a veritable city of knowledge, which accommodates over 40,000 people every day. All this talent is dedicated to scientific progress and social and cultural commitment, and it is that which has made it possible for us to apply for the status of Campus of International Excellence (CEI).

Nevertheless, globalisation is currently setting highly ambitious, strategic challenges for universities, if they want to be recognised as institutions of international excellence. The UAB intends to tackle these challenges in order to establish itself among the top universities, at both European and world levels.

In order to reach this objective, the active participation of all the members of our University is essential, along with the involvement and participation of all the agents in our environment that have the same objectives as the UAB, in order to be able to attain a prominent position in the international rankings.

In addition to the three key tasks which are currently assigned to all universities—teaching, research and transfer of knowledge—the UAB is not an academic ivory tower. It contemplates the social needs of our world and acts to satisfy them to the extent that its limited possibilities will allow, showing itself to be a responsible, supportive and committed institution, with an attitude that serves as an example for the overall education of its students and for the society that surrounds it.

The Campus of International Excellence Programme (CEI) not only envisages actions for improving excellence and academic internationalisation, but also those which affect social, environmental and cultural aspects that a high-quality university, which aims to be a point of reference in its setting and with a global projection, must perform.

As a result of its characteristics, the UAB is in a perfect position to meet the objectives of the CEI Programme. The UAB itself, with its integrated campus, where people both live and work, in contact with its regional surroundings in touch with the environment, has proven academic quality, a scientific setting with 25 research centres and institutes of recognised prestige, large installations such as the ALBA synchrotron, a highly technological business sector which forms the Vallès Technology Park and the large companies of the *B-30 Corridor* (which appears in a number of reports as the most dynamic in Catalonia). All of this, coupled with the communications infrastructures in this privileged setting, make it the most important R&D centre of the Mediterranean corridor, and probably the most important in southern Europe.

Attaining the status of Campus of International Excellence is a priority objective for the UAB, as it will enable us to reinvigorate the collaborative cooperation process in the extremely influential R&D setting that is now part of the UAB Research Park (PRUAB), with complementary services and significant added value.

The UAB^{CEI} defines two main priority strategic actions. On one hand, the so-called "Barcelona Nanotechnology Cluster-Bellaterra", which focuses on the fields of Materials and nanotechnology, made up of the UAB, a number of research centres and companies located in the PRUAB, and which is based around the extraordinary ALBA synchrotron installation. Then there are the fields of biotechnology and biomedicine, based in basic research centres on the UAB campus, as well as those located in hospitals affiliated to the UAB, focussing on clinical and translational research. Here we should also mention the extraordinary initiative focused on the historical Sant Pau Hospital complex, which is to house a project in the field of social sciences and international cooperation.

We are convinced that if the UAB obtains the status of Campus of International Excellence, this will increase the visibility of the entire combined complex of the UAB and the R&D centres, and will consequently attract talent and business initiatives. I have no doubt that this is the opportunity the UAB^{CEI} project needs to demonstrate its academic prestige, resulting in a qualitative and quantitative leap that, given its scientific and social commitment, will considerably improve its position among the leading universities in the world.

ANA RIPOLL ARACIL
Rector
Universitat Autònoma de Barcelona

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1. Introduction

The university has traditionally been the institution most open to individuals and to sharing knowledge, and one of the most highly valued by citizens. Nonetheless, the competitive sense of globalisation has also reached this institution, altering the way in which it sees its behaviour and its critical thought. This has given rise to the new dynamics of production which have been implemented in the English-speaking world, and which are currently being accepted internationally. All this has meant that the leading universities in the world are the North American universities that align themselves with these objectives (Harvard, Stanford, MIT, etc.).

On the other hand, ICT and the Internet have meant that comparison between researchers, groups, centres and universities is becoming increasingly easy and frequent. The best-known world university rankings, such as the Shanghai and QS-Times, are increasingly being used to evaluate the level of relevance in the international academic setting, making centres more or less attractive for researchers and students. Those universities with the greatest prestige and largest budgets are capable of recruiting more talent and improving their positions in these rankings.

The international rules of play do not allow for much leeway in the positioning. If we abide by the North American or British models, universities either work in order to compete for a space in the international elite or, like colleges, they have a local impact.

The aim of the Universitat Autònoma de Barcelona has long been that of establishing itself as a university of reference, and in the Spanish setting it has succeeded in doing so. Among Spanish universities, the UAB is currently ranked 2nd in the QS-Times, and is between 5th and 6th positions in the Shanghai ranking.

Nonetheless, like the all other Spanish universities, the UAB has yet to establish itself among the world's elite. The UAB is ranked 92nd among European universities and 211th in the world according to the QS-Times ranking ⁴, and at 126-170 in Europe and 303-401 in the World in the Shanghai ranking.

Despite the high level of international competition, **the UAB aims to establish itself among the best universities, on both European and world levels.** With this aim in mind, la UAB has implemented, and continues to implement, profound changes in the way the institution operates.

⁴ Data from the 2009 ranking. It improved its position with regard to 2008, when the UAB was in 106th place among European Universities, and 256th in the world according to the QS Times ranking.

The philosophy of the UAB's future project is in line with the design of the 2015 University Strategy, which complies with the idea that the 'knowledge economy' will be the future of developed societies. Consequently, in the future, universities and environments that have developed their R&D will be the central elements of the production model.

The conceptualisation of the 2015 University Strategy entails considering the improvement of universities as a key objective. The Campus of International Excellence Programme (CEI) is a central issue within 2015 University Strategy. One of the aims is for Spanish universities to establish themselves among the international elite and to compete in attracting talent in a globalised world.

The UAB is planning and conducting innovative actions, pioneering in the context of Spanish universities, such as : the new academic degree programmes, a new work commitment model for teaching staff and the conversion of assistant lecturer and collaborator's posts into scholarships. A number of these actions are already starting to bear fruit, while others are still in implementation phase or are about to be implemented.

28.307	Undergraduate Students ¹
2.575	Doctoral Students ¹
4.175	Master's Students ^{1, 2}
380	Doctoral theses presented ³
1.616	Publications in journals indexed in the Web of Science ³
31	European projects ³

¹ Includes national and international students

² 2007 – 2008 Academic Year

³ 2008.

Table 1. Data on the UAB⁵

At the same time, la UAB, along with other institutions such as the Spanish National Research Council(CSIC), the IRTA and the Catalan Government , has been participating for over 20 years in the establishment of a number of centres and institutes in order to strengthen its R&D status.

⁵ A complete table with information on the UAB can be found in Point 2. – The UAB now.

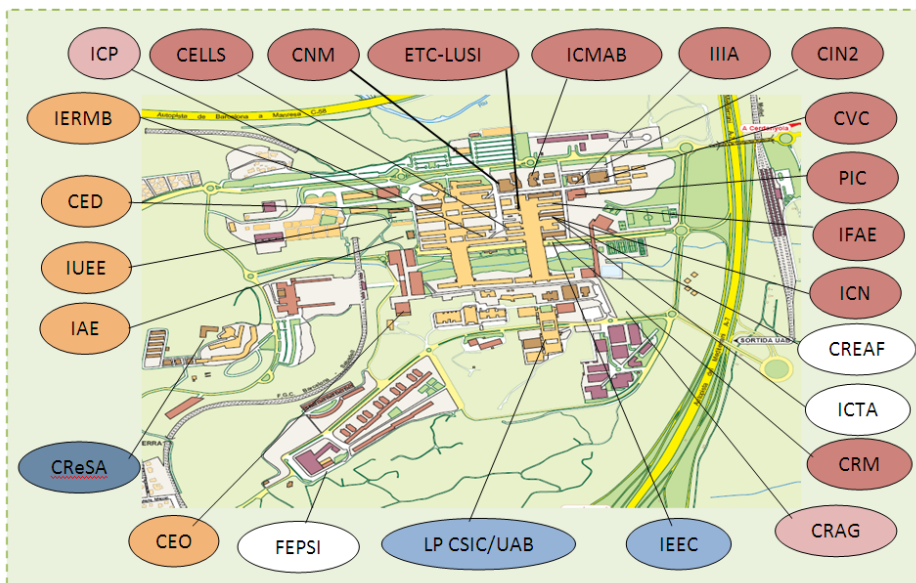


Fig.1.- The Bellaterra Campus houses centres of the UAB itself, affiliated centres with their own legal status, and other R&D centres of the Spanish National Research Council. A large number of them are shown in Figure.⁶

The recently created UAB Research Park (PRUAB) aims to make progress on the integration of the centres appearing in Figure 2 with the departments of the University, and it also offers them all assistance in R&D activities, technical and scientific services and support for knowledge transfer, offering tremendous possibilities for the future.

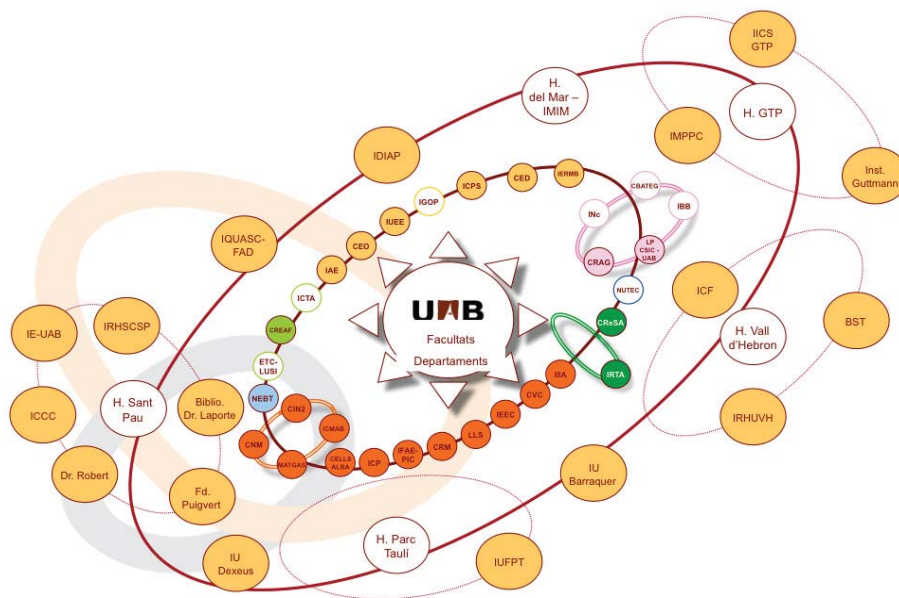


Fig. 2. The recently created PRUAB Park is being constructed around a core and two rings of centres and institutes, shown in the figure by circles. The core comprises the departments, faculties and technical and scientific services of the UAB, the inner ring is made up of the R&D centres on the Bellaterra Campus, and the outer ring comprises the research centres affiliated to the hospitals linked to the UAB.

⁶ For the full names of the acronyms given in the figure, see the Associations Document.

In addition, the UAB has another, much more ambitious long-term objective, which consists in promoting, leading and encouraging the integration, not only of the group of R&D centres, but also the productive infrastructure and the social and cultural environment, with the aim of organising along the B-30 corridor⁷ the creation of the **UAB-30 Knowledge Cluster**, as the foremost in the Mediterranean region.

This CIE submission is an excellent opportunity for ensuring that these groundbreaking changes are better assimilated by the academic community, due both to what the financial support would mean for the specific objectives proposed, and also in terms of the recognition and support that CIE status would mean for the innovative actions undertaken by the UAB in teaching and research.

Just as the CIE programme is a great opportunity for working on the integration of R&D centres in the PRUAB, it is also an opportunity to design and implement the actions required to make progress in organising the leading space of excellence in R&D in Spain.

For such an ambitious project to be feasible, it requires the resolve and experience to tackle it. The UAB has long demonstrated the coherence of its trajectory in this direction (Fig. 3). Nonetheless, in order to achieve these goals, the intermediate short-term and medium-term stages require careful planning. In other words, we plan to take full advantage of the period covered by the CEI programme:

- In the short and medium term, and starting from the present (in some cases from the recent past), the UAB is acting decisively and strategically on matters that are highly sensitive in a University, with measures rewarding **effort, excellence and the recruitment of talent** and which have already been approved in the corresponding governmental bodies, or are in the process of being so.
- In the medium term, the UAB intends to work on the process of **integrating the R&D centers and institutes**, which are often international references, and in whose creation the UAB itself has participated. More specifically, this objective is to promote research, postgraduate teaching and to generate synergies among all the members of the UAB^{CEI} project, strengthening the links that already exist between them.
- The long-term aim of the UAB is much more ambitious: to see the integration of its entire R&D, productive, social and cultural environment, with the aim of creating the **most important R&D cluster in the Mediterranean region**.

⁷ The B-30 is a 15km motorway which runs past the UAB, linking population centres and high-technology production centres, making this the most dynamic area in Catalonia. The B-30 runs parallel to the AP-7 which runs from France along the entire Mediterranean coast of Spain.

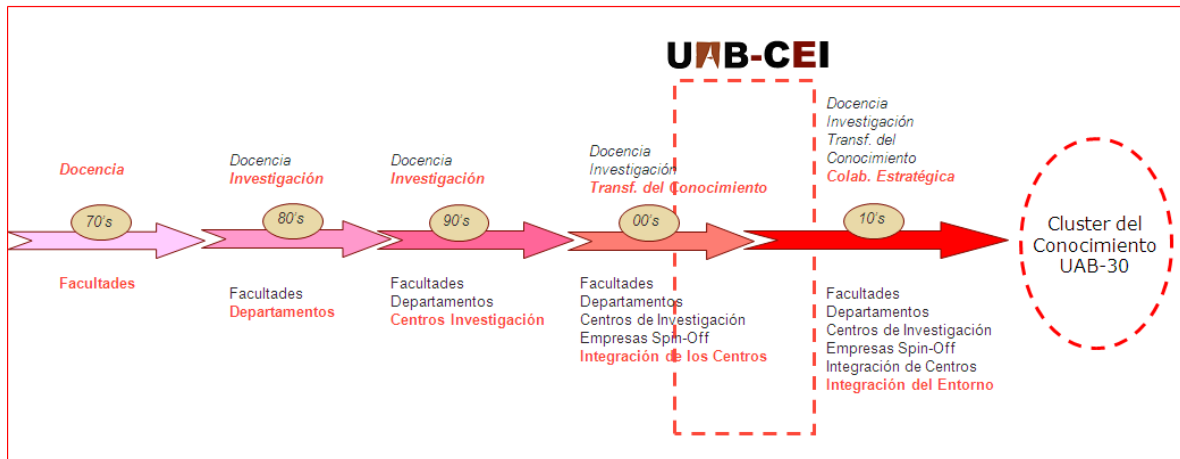


Fig. 3. The evolution of the UAB illustrates its desire to create powerful structures for the generation, communication and transfer of knowledge.

In order to achieve these objectives in the short and medium-term, the UAB is implementing, or is about to implement, a series of groundbreaking, innovative measures. The following section summarises the major areas, grouped into three broad areas: individuals, society and the institution.

Individuals (students, lecturers-researchers)

- Consolidation of a new academic model designed into two stages: an initial stage which finishes with the termination of the thesis; and a second stage, independent of the first, for attracting talent through international competitions, the objective of which is the contracting of researchers with an excellent postdoctoral career.
- The implementation of a new work commitment model for the teaching staff, on the basis of the quantified commitment to teaching, research and management. See the document on the UAB^{CEI} website.
- The implementation of a new model of teaching hours for academic staff adapted to EHEA degrees. Unlike traditional schemes adopted to date by Spanish universities, this model will value the teaching efforts made by the staff on the basis of classroom activity, and will also include an assessment based on the number of students that each lecturer is responsible for.
- The development of a programme for promoting associate professor staff to full professor position which includes four profiles to assess outstanding paths in research, teaching, knowledge or technology transfer and medical or veterinarian care, respectively.

- The extension of the programme of sabbaticals for research points every 10 years (year-long sabbaticals) or every five years (half-yearly sabbaticals).
- The development of the emeritus plan which, based on the early retirement of senior professors, allows a planned, gradual renewal of the staff, in line with programmes for recruiting young researchers (Ramón y Cajal, Juan de la Cierva, Beatriu de Pinós, etc.).
- Development of policies promoting entry of UAB graduates (degree, MA and PhD) into the labour market.
- Increasing number of trainee research staff as a result of the programme for converting the post of assistant lecturers and collaborators to scholarships.
- The design of a graduate-postgraduate model for adapting the Spanish 4+1 model to the 3+2 model which is prevalent in Europe, in order to facilitate the mobility of European students. These students must complete an additional 60 ECTS credits in English.

The institution (training, R&D)

- Organisation of the offer of academic courses within the framework of the EHEA, with the aim of improving quality based on the extensive experience acquired through the pilot programme that has been carried out since 2002 and which includes 17 degrees.
- Implementation of the 3rd Master Plan of the UAB, 2010-2013, as an instrument of strategic management and progress for the effective functioning of the University.
- Establishment of a pilot multimedia space for interactive group work, either in classrooms or on-line, to be applied to teaching, R&D and transfer, and which can be used by all organisations linked to the UAB^{CEI} project.
- Promoting the use of English in undergraduate and postgraduate teaching, by assigning greater value to credits taught in English than to corresponding credits taught in Spanish or Catalan. One objective of this plan in the medium term is to ensure that 10% of all undergraduate teaching is in English.
- Internationalisation as a fundamental objective for the future of the UAB. We have opted for high-quality international Master's degrees, increasing the number of those that are taught in English.
- Concerted commitment to nanotechnology as a priority strategy. Along these lines, the research groups from the departments of the UAB, the Barcelona Institute of Materials

Science (ICMAB-CSIC), the National Microelectronics Centre (CNM-CSIC), the Catalan Institute of Nanotechnology (ICM), the forthcoming opening of the Nano-science and Nanotechnology Research Centre (UAB, CSIC and the Government of Catalonia) and of the ALBA synchrotron, make up without doubt the most important nucleus (Nanocluster) in Spain in this setting, and one of the most important in Europe.

- Intensification of a strategic line of biotechnology and biomedicine with the consolidation of three key projects:
 - The Institute of Predictive and Personalised Cancer Medicine
 - The establishment and development of the ICTS⁸ CBATEG-Mouse Clinic as a natural development of the Animal Biotechnology and Genetic Therapy Centre (CBATEG)
 - The Agrigenomic Centre, created in consortium with the IRTA
- In addition, there are many other actions which are planned or already underway, such as: the professional training plan, policies for incorporating talented researchers (Ramón y Cajal, ICREA, ICREA-Academia), and prizes for researchers who publish in journals of the highest international prestige, such as *Nature* or *Science*, among others.

Society (territory, knowledge transfer)

- The consolidation of the PRUAB and the continued integration therein of the R&D Centres.
- Implementation of different structures for improving the transfer of knowledge and technology, such as the Eureka Building and the M2 and M3 Buildings as incubators and services for the entire UAB^{CEI} within the integrating objective of the PRUAB.
- Plan for assigning UAB researchers to R&D centres and institutes outside the UAB. There are currently a large number of lecturers ascribed to centres and institutes, and some of these researchers hold the posts of directors of the centres themselves. See the document on the UAB^{CEI} website.

Principal objectives and actions of the UAB^{CEI} projects according to the 6 contexts proposed by the Ministry of Education

The principal objectives to be attained in the development of the UAB^{CEI} project can be broken down into each of the six contexts contemplated by the Ministerial Order.

⁸ Infraestructuras Científicas y Tecnológicas Singulares (*Extraordinary Scientific and Technological Infrastructures*)

Below (Fig 4) is a general diagram of the project, in which a number of the main objectives in each of the contexts are given, along with some of the actions which are to be carried out in each of them. A list of all the objectives classified by context can be seen in Section 4 of this document.

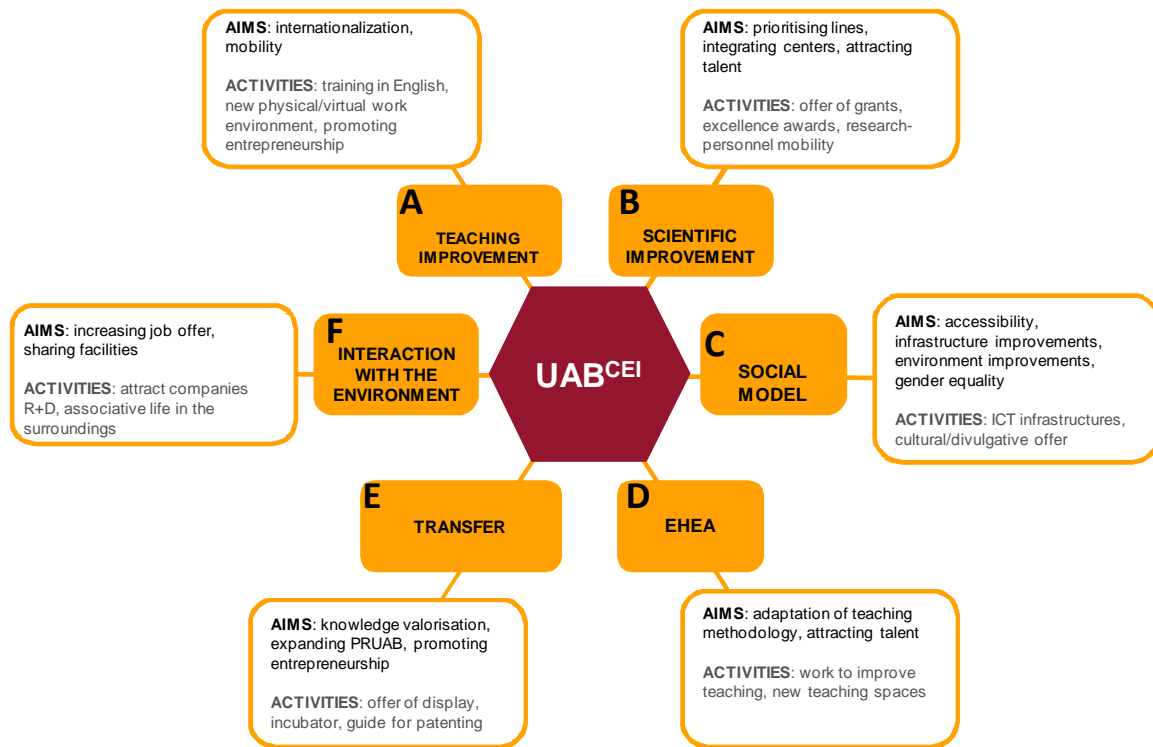


Fig.4. Overall view of the entire UAB^{CEI} project classified by context. In each context, examples of certain objectives and actions are given by way of example.

Long-term objectives

In the long term (a period which does not correspond to the UAB^{CEI} project), the UAB aims to achieve ambitious projects, which demonstrate a line of continuity with those that have been presented in the short and medium term. These include:

- **Encouraging and leading the constitution of the UAB-30 Knowledge Cluster**, as a future development of the PRUAB, incorporating businesses and institutions into the same.
- **Promoting English in the UAB** in order for it to be used intensively in everyday life on the Campus.

- Working towards **establishing itself among the top 50 universities in Europe by the year 2020** in international rankings.

These long-term objectives are listed in Section 5 of this document.

2. The UAB now. The starting point.

The Universitat Autònoma de Barcelona (UAB) is a young university in a unique setting. It was founded in 1968 and is currently a **focus of recognised prestige**, attracting students and researchers from all over the world.

Over 3,600 lecturers teach (1,705 full time) a total of more than 40,000 students – including high quality teaching in the fields of social sciences, humanities, science and technology and health sciences, imparted in 13 faculties and schools. It is this multi-disciplinary nature of the campus that is one of the driving forces behind its excellence. The UAB is currently in the midst of the process of adapting to the European Higher Education Area (EHEA), the Bologna Plan. Starting from the 2009-2010 academic year, the UAB will be imparting 47 fully adapted degree courses. The quality of teaching translates into an employment success rate of between 90 and 100% for almost all degrees, and is maintained in the doctoral programmes: **47 doctoral degrees in the UAB have been awarded Quality Recognition**.

Research on the UAB campus is carried out in 57 departments, 6 UAB research institutes and a further 17 institutes and centres with their own legal status, as well as five research centres of the Spanish National Research Council (CSIC). The wide variety of disciplines and areas of knowledge, along with their concentration in a single space, facilitates an interdisciplinary approach and research proposals in emerging areas.

With resources obtained for research totalling **59 million euros in 2008**, around 400 doctoral theses are presented every year at the UAB, and there are currently 277 research projects under way. The UAB is the Spanish public university with the highest weighted scientific productivity, and one of the leading Spanish universities in terms of absolute production: a total of 1,616 scientific articles were published in 2008. Close to 60% of these articles are located in the first quartile in terms of impact value, i.e. they are published in the journals of the highest international prestige. The UAB also contributes to the transfer of knowledge from research through the activity of its University Publications department. A total of 24 scientific journals are published, or co-published, involving a level of exchange with other national and international universities and scientific institutions of 2,172 volumes per year.

The UAB has a total of 48 support services for teaching and research. These range from specialised technical scientific services, to more general services available to the entire community.

The teaching research and sector is completed by a group of hospitals affiliated to the University and which house teaching units from the Faculty of Medicine: the hospitals of Santa

Creu i Sant Pau, Vall d'Hebron and Hospital del Mar, in Barcelona; the Hospital Germans Trias i Pujol, in Badalona; and the Consorci Parc Taulí in Sabadell.

The following table shows the most important data on the University, for the 2008-2009 academic year.

57	Departments ¹
13	Faculties and Schools ¹
28.307	Undergraduate Students ²
2.575	Doctoral Students ²
1.886	Official Masters' students ^{2, 3}
2.289	UAB Master's students ²
9.657	Students on temporary/permanent professional training programmes
2.678	Exchange students
1.135	International undergraduate students
692	International Official Master's students
439	International doctoral students
3.688	Academic staff
1.621	Research staff being trained ⁴ in departments
2.340	Administration and Services Staff
78	Degree courses
101	Official Master's degrees.
481	Continuous/permanent professional training programmes ³
47	Doctoral programmes with mark of High Quality
380	Doctoral theses read
1.616	Articles Publisher in journals indexed in the <i>Web of Sciences</i> ⁵
218	Consolidated research groups ⁶
441	Research agreements ⁵
246	National projects ⁵
31	European projects ⁵
1.600	m ² devoted to the incubation of companies
33	Patents applied for ⁵
150	Portfolio of patents over the last 10 years
30	<i>Spin-off</i> companies created since 2001 ⁵
59.649.701	Resources obtained for research and transfer (€) ⁵
15.473.362	Funding received for research in national calls (€) ⁵
4.586.388	Funding received for research in international calls (€) ⁵
417.047.000	Global budget of the university (€) ⁷

¹ For 2009.

² Includes national and international students.

³ 2007-2008 academic year.

⁴ Included in doctoral students.

⁵ For 2008.

⁶ Includes SGR'09 call.

⁷ Definitive budget settled in 2008.

Table 2. The UAB in figures (2008-2009 academic year)

The UAB is one of the few Spanish universities located on a campus with an infrastructure created exclusively for university life. Situated in a natural setting, it covers a total of 263

hectares, of which 189 are green areas, woodland, and wooded and gardened areas. The UAB provides the university community with a range of services which cover all the needs for academic life, leisure and everyday life. It has a university residence with places for 2,200 students and lecturers, and which this academic year has been extended with 432 new places; a residential area with houses for lecturers, administration and services personnel (PAS) and their families for longer stays; and a four-star hotel.



Fig. 5. The UAB is located in a natural setting of almost 200 hectares of green land and at the centre of a major communications network.

The UAB also has premises and meeting rooms for associations and groups, rehearsal halls, a cinema and a theatre. There is also a *Treball Campus* - an employment and careers service to help students enter the labour market.

The UAB has an extensive range of sports services and installations: football pitches, tennis courts, sports centre, climbing wall, indoor and outdoor swimming pools, competitive teams and an extensive programme of activities. Among the on-campus services is a health centre, a nursery, a public primary school, a secondary school and a Veterinary Hospital.

Life in a natural setting provides tremendous opportunities for formal and informal interaction between students, researchers and lecturers from the different areas of knowledge, the results of which are collaborations in multidisciplinary research and teaching projects.

Forming part of the artistic heritage of the UAB are the columns by Andreu Alfaro and a number of sculptures by artists such as Valdasquin, Plate and Hafner, Perejaume, Corberó and Palazuelo, situated at strategic locations around the campus, along with a series of fifty

paintings and lithographs. Work is currently under way, with the Cerdanyola del Valles Council, for setting-up of an artistic route through the campus.

In addition to the Bellaterra campus, the UAB has a specialised campus for Business Studies and Computer Engineering in Sabadell, ; and it also has the teaching units in the affiliated hospitals.

In Barcelona, the University has a historic building, the UAB-Casa Convalescència, which forms part of the modernist Hospital de la Santa Creu i Sant Pau complex. This building houses the head office of the UAB Foundation, and is also a space which extends the range of installations, rooms and halls in the UAB Campus Convention and Conference Centre.

In addition, within the Hospital de la Santa Creu i Sant Pau there are plans to build the United Nations University, a Medical Research Institute, the Barcelona Biohealth School, a Residence for Scientists and Researchers, and a Convention Centre, all with the participation of the UAB.

The UAB is committed to the environment and to the social setting. Back in 1995 it created the Office of Environmental Health and Hygiene, responsible for the environmental management of the campus and occupational risk prevention. In 1999 it embarked upon the process of preparing its *Agenda 21 Local*, which resulted in the approval of the Local Action Plan for the sustainability of the UAB.

In 2006, the UAB was **a pioneering university in approving a plan of action for gender equality.** The UAB Observatory for Equality monitors equality, justice and solidarity policies.

The UAB also has a foundation devoted to solidarity activities: the Fundació Autònoma Solidària (*Autonomous Solidarity Foundation*). This institution establishes links with the most disadvantaged members of society and promotes the setting up of national and international cooperation programmes.

In September 2006, the UAB's governing body **approved the UAB Strategic Accessibility Plan.** The table below shows the diagnosis of the UAB accessibility report , commissioned by the ONCE Foundation for the Campus of International Excellence proposal.

The Autonomous University of Barcelona currently has a number of Accessibility Plans, which have been implemented through the signing of different agreements and subsidies in previous years ONCE-IMSERSO. Year: 1996/1998, 2000/2002, 2003/2004, 2004/2006 and 2007/13.

Additionally, in September 2006, the governing body approved the UAB's Strategic Accessibility Plan. Theme 9 of the plan defines strategic lines for the suppression of barriers for disabled individuals.

Thus, actions for improving accessibility have a long history, starting in 1997, and it is envisaged that the Plan will be fully implemented by 2013.

The University has a Disability Attention Service, PIUNE, and various individuals responsible for *Diseña para Todos (Design for All)*.

Specific audits have also been conducted to assess accessibility.

In line with the above, it is evident that the University has implemented a policy which can guarantee the efficient management and operation of these resources assigned to improving accessibility and their maintenance.

Nonetheless, it does have an Accessibility Quality Certification (UNE 170001, 1-2), it being considered that the centre is in a position to consider applying for it, taking into consideration the advantages of having already implemented the management system.

Table 3. Diagnosis of the Report on accessibility in the environment and in services and processes, within the setting of the Campus of International Excellence Project of the Universitat Autònoma de Barcelona .

The *raison d'être* of any university is its students. In the UAB, this statement carries much more weight, since they are also citizens of a city of knowledge in which, along with their task of learning have to live in a community. Thus, alongside the faculties and schools, there are houses, restaurants, businesses, sports installations, etc.

Students and citizens of the UAB, they are integrated in the academic and social life on campus, which is an essential element of the University. This model, which is so common in English-speaking universities, distinguishes the UAB from practically all other Spanish Universities, which are predominantly located in cities in line with the urban model, and where students only visit the university a few hours a day.

This is the perfect contrast between the uniqueness of the UAB as a campus university versus the urban structure of the majority of Spanish universities. There is a strong tradition of students' associations for all areas of activity: sports, cultural, NGOs, etc, with an elevated awareness of matters that do not just affect the UAB itself, but also the Spanish universities as a whole, and which is a critical spirit that has been one of the most important assets of universities through the ages.

Universities in Spain are seen as a public service, as a service to society. This means that they are accountable to the bodies which society, through its institutions, has set up to monitor them.

Apart from the two main controlling bodies in all Spanish universities—the Board of Trustees which looks after the interests of society, and the Governing Council, where decisions on universities operation are taken—there are other management and control instruments used by the UAB in the operation of the faculties, departments and services. To this end, the UAB draws up the Contract Programme as an instrument for controlling and monitoring the internal bodies which conduct the activities of the UAB. Contract programmes contain objectives, actions and indicators for evaluating and, where applicable, rewarding the operation of those elements in which university life is carried out.

UAB Research Park (PRUAB)

The core of departments and research Centres located on the campus, research institutes in affiliated hospitals and the spin-off companies created in the University, comprises a powerful unit of research and innovation. With the aim of integrating this complex, the UAB has created the PRUAB, a strategic alliance between the UAB, the Spanish National Research Council and the Agri-foods Research and Technology Institute (IRTA), as a legal body in its own right. In 2008 the scientific production of the body as a whole comprised over 3,200 articles in reference journals, making it the most important research centre in Spain. This activity map will be completed with the location of business R&D activities in the EUREKA I building, which is soon to be opened on the UAB Campus, and which would be partially financed by the UAB^{CEI} Project.

The entire unique, multi-disciplinary framework that contains the UAB provides excellent results in the generation and transfer of technology and knowledge. In 2008, the UAB registered **33 new patents and signed 441 research agreements** to the value of 15 million Euros. Since 2001, 30 spin-off companies have been set up, derived directly from the research activity of centres at the UAB.

The UAB setting

Work is underway in the area surrounding the UAB to develop the 70-hectare ALBA Park, which will house research centres and high-technology companies, and where the ALBA synchrotron is located – a national institution, recognised as an ICTS by the Ministry of Science and Innovation, and which is the greatest scientific innovation ever seen in Spain, This installation is the only one of its kind in southern Europe. **The ALBA synchrotron has strong links with the University.**

It should be pointed out that throughout this **setting there are a number of different additional scientific infrastructures** (existing or planned) from the Ministry of Science and Innovation ICTS programme: the CBATEG-Mouse-Clinic (Animal Biotechnology and Genetic Therapy Centre), the Clean Room of the CNM-CSIC (National Centre for Microelectronics) and the future Centre for Structural and Proteomic Biology (promoted by the UAB and the Spanish National Research Council, in the context of the ALBA synchrotron).

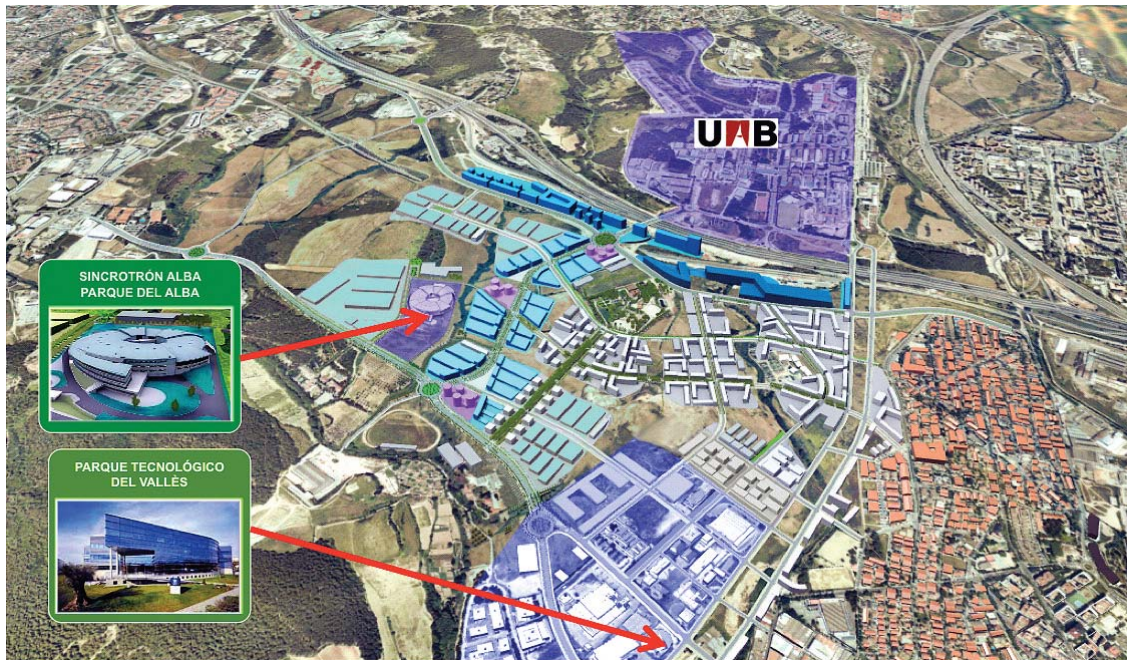


Fig.6.- The Synchrotron, the ALBA Park and the Vallès Technology Park.

In addition, the Universitat Autònoma de Barcelona has a highly favourable geographic location. It is only 20 km away from the centre of Barcelona, and it lies on one of the principal axes of industrial and economic activity in Spain—the so-called B-30 Corridor. This axis also includes the Cerdanyola del Vallès Directional Centre, which encompasses the ALBA Park and the Vallès Technological Park (Fig. 6). The latter houses 170 technological companies, along with one of the business incubator centres for UAB spin-off companies, the Masia Can Fatjó. Similarly, in the municipality of Sant Cugat del Vallès, we find ESADECREAPOLIS, the ESADE business Park, devoted to innovation and the setting up of businesses, and which has also become a member of the UAB^{CEI} project.

The UAB campus in Bellaterra has train links with the surrounding area: there is a station on the RENFE suburban network and, right in the very centre of the campus, there is a station of the Catalan Government rail network (the so-called “Vallès Metro”), which means that it is only 30 minutes away from the centre of Barcelona, and which connects it directly with Sabadell, Sant Cugat del Vallès and Cerdanyola del Vallès. The campus has a heliport, and is located close to Sabadell Airport, with regional connections via private flights and air taxis. Communications with France via the AP-7 motorway and proximity to the El Prat International airport (Barcelona), and Girona International airport, which is specialised in low-cost flights, facilitate the UAB’s domestic and international connections.



Fig.7.- The UAB's Bellaterra Campus's connections with its environment.

A CEI proposal is a four-year strategic plan. Nonetheless, the university generally sets longer term strategic objectives (between 10 and 15 years) in which the future projection is much more general than that given by conventional strategic plan, even though this plan must be coherent with that projection. The UAB has a long-term vision in line with the 2015 University Strategy which involves having a positive impact on its environment through its commitment to knowledge and innovation. Like all good long-term planning, it must be highly strategic and involve minimum operational factors.

3. The UAB^{CEI} project: Promoting Knowledge, Encouraging Innovation

The UAB^{CEI} project is a decisive instrument for the improvement of the UAB in terms of teaching, research and transfer, as well as in the life on the campus itself, which is an objective that the UAB has set itself in the short and medium term. The plan will also be helpful for the improved integration of the centres and institutes in the UAB Research Park (PRUAB), so that the final result is more than just the sum of its parts: the product of the synergies among all members of the group as a whole.

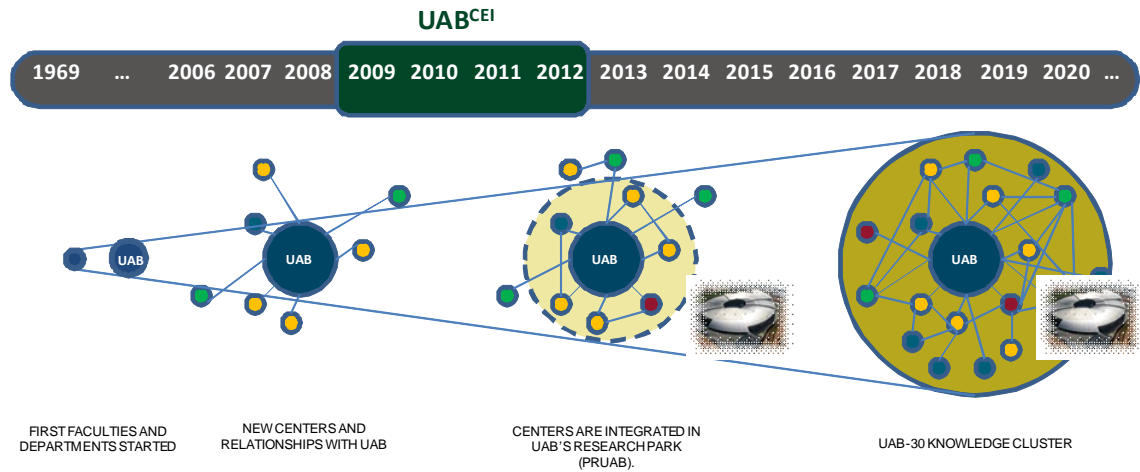


Fig. 8.- Evolution of the UAB Campus and the time plan of the UAB^{CEI} project.

In addition to recognition of the UAB’s leadership and excellence by the members associated with the UAB^{CEI} project, there is the excellence of the proposal and the external recognition of the institution leading it. Therefore the status of Campus of International Excellence is not only required for the UAB, but for the entire group of associated institutions. This would mean that all the members of the group are be viewed under a brand image of excellence: that of the UAB^{CEI}.

Commitment to Knowledge and Innovation: this is the motto that defines the spirit of the UAB itself. It means, on one hand, taking excellence as a principle, the commitment with which the UAB proposes to comply with its three missions in respect of Knowledge: its generation, communication and transfer.

Commitment to innovation has a dual meaning:

- It reflects the UAB's determination to incorporate any idea or initiative which may improve the institution itself and its environment; and
- It shows technological innovation as a model for cooperation between research and development for reinvigorating the productive setting.

3.1. Vision and Mission

In the general description of the strategic plan, it is essential to describe the vision of the UAB^{CEI} project, which is based on the vision of the University itself.

The UAB is a public university with an international vocation, characterised by a strong orientation **towards excellence in scientific research and high quality teaching**, which is closely linked to research. It is a university with a marked commitment to knowledge and innovation; a University with great sense of its own identity and in which coexistence with the members of the community is both intense and enriching; a university integrated into its surroundings, a point of reference for researching, working and living there; a university which, since it was founded, has had a marked social and environmental commitment which pervades all its activities; a university with the capacity and desire for leadership which makes strategic commitments for its future and for that of its surroundings.

The mission of the UAB^{CEI} project, throughout the period of this plan, is to attain levels of quality comparable to the top European universities. In the field of teaching, this will be attained by implementing actions for improving and establishing the EHEA and with measures for internationalising the teaching offer, to give just a few examples. In research and transfer, the way forward will be the consolidation of a strong centre through the joint capacity, in the PRUAB, of all the R&D centers and institutions linked to the University. To this end, we propose actions aimed at attracting talent and promoting the technical and scientific services, by way of example. All these actions are listed, justified and budgeted for in Section 4 of this document.

3.2. Priority objectives

Increasing the integration and aggregation of capacities

The final key objective of the UAB^{CEI} project is to work on the process of integrating the capacities of each and every one of the elements in the PRUAB, as well as those bodies linked to the University as a result of their geographical proximity and close relations with urban councils, technological companies, PROs⁹, and other higher education centres, in order to establish itself as one of the most powerful centres of higher education, research and technology and knowledge transfer in Europe.

The transfer of research results, along with other knowledge generated in the university, to society is one of the missions of the UAB and one of the priorities of the UAB^{CEI}.

On a departmental level, a number of transfer activities are conducted: research agreements, projects, publications, journals or dissemination activities. Another additional step in transfer actions has been the establishment of the UAB Research Park (PRUAB), the principal aim of which is to facilitate the transfer of technology and knowledge.

A working model has been created, based on encouraging and making full use of the capacity and experience of existing structures, and establishing the necessary measures for coordinating the entire function of transfer under the same policy management.

⁹ PROs: Public Research Organisation

Recruiting talent

One of the key objectives of the UAB^{CEI} is the recruitment of talent. **The UAB generates new actions for attracting talented students from all over the world**, regardless of their nationality, through new initiatives. An international postdoctoral scholarship programme has recently been set up with the aim of recruiting talent, in which only those individuals with a PhD from universities other than the UAB can take part.

In order to recruit talent, we need to propose that are attractive in terms of R&D such as the existence of conditions conducive to a high quality of life. **The UAB is situated in the heart of one of the most attractive residential areas in Catalonia**, with prestigious schools, magnificent sports installations, golf courses, and all less than half an hour away from the centre of Barcelona. The UAB plans to include this information in its informational actions in order to stimulate the recruitment of talent.

Thanks to its policy for the recruitment of foreign talent, the UAB has a significant number of researchers from other countries through competitions such as the PEOPLE programme from the 7th Framework Programme of the EU, Juan de la Cierva, Beatriu de Pinós, Ramon y Cajal, Serra Hunter, ICREA or through the Trainee Research Staff programmes of the UAB itself or the Ministry.

The UAB has an office in the city of Shanghai to facilitate the exchange of students and research staff with Universities in China. There are 15 bilateral framework agreements with different Chinese universities, allowing student exchanges to be set up in both directions. There is currently a community of around 150 Chinese students in the UAB, which represent between 10% and 15% of those who come to Spain to study at university.

At the end of 2009 the UAB expects to open an office in Seoul, in South Korea. The structure will be similar to the one existing in Shanghai, but aimed at strengthening relations between the UAB and South Korean institutions in research and transfer projects.

Internationalisation.

Internationalisation is a fundamental objective for the future of the UAB. We are committed to high-quality international Master's degrees, increasing the number of those that are taught in English: the UAB teaches 11 Master's courses in this language. The adaptation courses for EU students who come with three-year degree courses and who wish to study for a Master's degree in the UAB are also in English.

The opening of the offices in Shanghai and Seoul is evidence of the UAB's desire for internationalisation (See previous section)

One of the principal indicators for measuring the internationalisation of our research is our participation in European projects, principally in the Framework Programme of the European Community for Research. The UAB obtained a total of 14,727,105 Euros from the 6th FP (2002-2006), and from the current 7th FP (2007-2013) it has already obtained a total of 9,745,904 Euros.

The UAB has over 1,400 agreements with universities in over 50 countries worldwide, and forms part of more than 10 inter-university strategic collaboration networks, among them the *European University Association* (EUA). One of the most important networks for the UAB^{CEI} is the **Alliance4Universities**, constituted by the Universitat Autònoma de Barcelona, the Universidad Autónoma de Madrid, the Carlos III University in Madrid and the Pompeu Fabra University in Barcelona. Established in 2007, the Alliance has implemented a number of different projects, the most noteworthy of which include an annual programme for 24 two-year postdoctoral stays which can be taken in any of the three universities other than original one, and the creation of the Office 4U in Brussels, with the collaboration of the Spanish National Research Council(CSIC).

Priority strategic Lines

Within the Vision of the UAB^{CEI} project, the UAB, from among the wide range of research that it possesses, aims to attain international excellence in two specific research settings:

- **Nanotechnology-Nanoscience**
- **Biotechnology-Biomedicine**

Both are strategic priority research lines for the Universitat Autònoma de Barcelona, and on which research activity will be focused. Here mention must be made of the enormous potential existing in the confluence of these two lines, given that together they give rise to new, highly innovative projects. This is the so-called convergence of technologies, in which aspects such as nano-biomedicine and bio-informatics will play a key role, and in which the UAB has all the elements required to transform it into a future vector.

3.3. Project Communication and Additional Information

A website has been created to make the UAB^{CEI} project known and to facilitate access for the evaluators to additional information (www.uab.es/uab-cei). In it, there is a multimedia presentation, images, an interactive map and all graphical information of importance for the UAB^{CEI} project.

In the site, there are two windows with documents containing information. The first one is specially open to the participation of the UAB's community. There are links to all the documents that were mentioned in Phase I.

The second window contains additional information for the evaluators, with access restricted to them. The following documents can be found there:

- The executive summary.
- The project description.
- Qualitative and quantitative results
- The association document and all the agreements, manifests of adhesion and other documents from the associated institutions.
- The economic report, requested financing and budget.
- A 10-minute video that describes the project under a narrative perspective (another shorter version with a different approach will be played on the day of the oral presentations).



Fig. 9. The UAB^{CEI} Project website

4. UAB^{CEI} Project Action Areas

To achieve the overall objectives of the proposal presented, the UAB will carry out a set of actions that are perfectly aligned with the strategy to build a campus of excellence based on the integration of research, transfer and higher education centres, creating an infrastructure with a degree of potential that is more than the sum of its parts.

In this section we present a list of objectives to be achieved while implementing the UAB^{CEI} project, arranged to fit in with each of the six fields described in the Ministerial Order.

To achieve these objectives in the medium and long term, the UAB has issued or will be setting up a series of innovative and pioneering measures. An explanation is given below of the actions that will be taken and the indicators that will define both the starting point and the end point that the university wishes to achieve with this proposal. They are grouped into the areas of assessment set out in the Spanish Ministry of Education programme.

We have also set up a colour coding system that will give us a more general overview of these actions, based on three main lines (people, institution and society), to which we have referred previously, within the area categories.



4.1. Area A) TEACHING IMPROVEMENT

The Universitat Autònoma de Barcelona offers high quality teaching¹⁰ in the social sciences, humanities, experimental sciences, technology and health sciences, given in 14 faculties and schools. We have more than 3,800 lecturers teaching a community of over 40,000 students.

The quality of teaching translates into a graduate employment rate of between 90 to 100% across all disciplines and this continues into the doctorate programmes: 47 doctorates at the UAB have a quality recognition award.

¹⁰ The UAB comes second in the ranking of Spanish universities published by the newspaper, El Mundo, in May 2009. This ranking comprises a significant teaching element, in comparison with international rankings that lean more towards research results.

The UAB has innovative tools with which to carry out this teaching work, such as the Virtual Campus (a virtual learning environment) and the Teaching Resources centre at the Faculty of Medicine and the Multimedia Resources centre at the Faculties of Science and Bioscience.

Furthermore, the UAB Libraries Service provides bibliographical and documentary support to the teaching and research activities conducted at the Universitat Autònoma de Barcelona. It has seven libraries on the Bellaterra campus, one on the Sabadell campus and four at the teaching units in hospitals. It is a member of the Consortium of Academic Libraries of Catalonia (CBUC) and the Red de Bibliotecas Universitarias (the Network of University Libraries or REBIUN). Its quality system complies with the ISO 9001 standard. It also manages an online digital resource search engine and access to more than 600 data bases. The UAB libraries currently contain 1,042,245 monographs, which make up a collection measuring approximately 55,350 metres. They have seating for 4,647 readers.

As stated in the previous section, internationalization is a fundamental objective for the future of the UAB. We have opted for high quality international Master's programmes and increased those that are given in English. The UAB teaches 11 Master's programmes in English. We are also scheduling bridging courses in English for those students arriving with a three year degree who want to do a Master's programme at the UAB. The UAB is also advertising internationally for candidates for PhD scholarships. These vacancies are the result of the conversion of assistant lecturer and collaborator positions. In the most recent PhD scholarship recruitment drive (2008-2009) 7,000 applications from more than 90 countries were received.

In the 2007-2008 academic year, 713 UAB students took part in the Erasmus programme and the University hosted 1,359 foreign students on mobility programmes. The UAB holds sixth position among all the Spanish universities in the list of preferred destinations for Erasmus students. The UAB also has its own student mobility programme, called Study Abroad.

The Graduate School belongs to several international networks of continuing education institutions, with the aim of cooperating and sharing experiences with other prestigious universities. The purpose of this is to improve the level of internationalization of our academic products, increasing the number of subjects taught in English, both at undergraduate, Master's and doctorate level and to teach masters programmes exclusively in English.

The UAB is also a member of the Graduate School of Economics, an organisation for scientific cooperation, research and training in economic and social sciences, of which the Universitat Pompeu Fabra, the Instituto de Análisis Económico (Institute of Economic Analysis) of the CSIC located on the UAB campus, and the Centre de Recerca de Economia Internacional (the Centre for Research into International Economics or CREI) are also members.

This strategic plan will improve teaching quality, capitalizing on the full potential of the centres, companies and organisations in the environment, benefiting university students and attracting the best international students.

In order to attract and to ease the stay of foreign students and researchers, the UAB has an information office located in the centre of the campus, the International Welcome Point (IWP); a hall of residence with 2,200 places and various accommodation options; courses in Spanish and Catalan for foreigners; and a large information content in English on the UAB website.

Below, we set out the specific objectives that the UAB, through the UAB^{CEI} project, intends to consolidate in the area of improvement to teaching quality:

- **Objective A1:** Improve the level of internationalization of our academic products¹¹.
- **Objective A2:** Increase the number of doctoral theses presented.
- **Objective A3:** Increase the range of work experience opportunities for campus students in the centres around the UAB^{CEI} environment.
- **Objective A4:** Increase the percentage of students from other universities.
- **Objective A5:** Incentivate the creation of digital content by teaching staff and facilitate access to UAB data bases and digital libraries for staff at UAB^{CEI} centres.
- **Objective A6:** Incorporate local councils, the Valles Technology Park and the companies along the B-30 corridor into the UAB^{CEI} project to bring new perspectives, resources and capital aimed at implementing new, entrepreneurial and innovative initiatives.
- **Objective A7:** Improve teaching spaces and laboratories on campus.
- **Objective A8:** Improve teaching in specific areas.

Below we list the actions necessary to achieve these objectives:

¹¹ Objective A1 coincides with objective D1. It is listed twice in order to include it in both of the areas of the Ministerial Order to which it is relevant.

Action 1



SET UP A FUND OF 400 GRANTS TO STIMULATE TEACHING IN ENGLISH BY FULLY SUBSIDISING LANGUAGE COURSES FOR LECTURERS.

The UAB aims to incentivise strategies that orient teaching towards the EHEA, improving its internationalization and its overall quality. One such strategy is to increase the use of English, in order to facilitate access for European students to the UAB Masters and Doctoral programmes. Increasing lecturers' English level will increase the number of courses taught in English.

OBJECTIVES: A1 AND D1

INDICATORS: Percentage of master's courses taught in English.

Action 2



CONSOLIDATE THE PROGRAMME OF GRANTS FOR TRAINEE RESEARCH STAFF (TRS) IN CENTRES AFFILIATED TO THE UAB^{CEI} PROJECT AND PUBLICISE IT INTERNATIONALLY.

The university offers a range of TRS grants as part of how we apply the guidelines of the new degree structure. Research can be conducted within a university department and in centres linked to the UABCEI Project (OPIS, companies, etc.). This action also aims to encourage research activity in the UAB's priority fields, attracting the best students internationally by offering an attractive grants system.

OBJECTIVES: A2, A4, B1, B3, B4 AND D4

INDICATORS: Average number of theses per year.
Number of Ph.D. students.
Percentage of foreign Ph.D. students.

Action 3



PROMOTE THE POTENTIAL FOR RECRUITMENT MEDIATION BY THE *TREBALL CAMPUS* SERVICE IN UAB^{CEI} PROJECT-LINKED ORGANISATIONS.

The UAB's *Treball Campus* Service manages a list of job vacancies and tutored internships that would be increased through promotional actions.

OBJECTIVES: A3, B3, C1, E3 AND D5

INDICATORS: Offers of internships at organisations linked to the UAB^{CEI} project.

Action 4



ESTABLISH AGREEMENTS WITH PUBLISHING HOUSES OWNING DATA BASES AND BIBLIOGRAPHICAL COLLECTIONS TO GIVE UAB^{CEI} CENTRES ACCESS TO INFORMATION.

These agreements would facilitate the integration of the centres linked to the UAB^{CEI} giving them joint access to this information, managed by the UAB Libraries Service.

OBJECTIVES: A5

INDICATORS: Linked-in organisations with access to data bases.

Action 5



INCENTIVISE KNOWLEDGE TRANSFER WITH INITIATIVES TO GET LECTURERS TO PUBLISH THEIR COURSES ON OPEN-ACCESS DIGITAL PLATFORMS.

Sharing information and knowledge, particularly teaching resources, is a crucial way to achieve integration of the centres linked in to the UAB^{CEI} project.

OBJECTIVES: A5

INDICATORS: Number of subjects published digitally
Number of students accessing information on the digital platforms

Action 6



CREATION OF AN ENVIRONMENT FOR MANAGING SCIENCE AND TECHNOLOGY KNOWLEDGE AND SHARING KNOWLEDGE RELATING TO TEACHING AND RESEARCH WORK. THIS WOULD BE A SPACE FOR COLLABORATIVE WORK, EITHER FACE-TO-FACE OR VIRTUAL, WITH STATE-OF-THE-ART MULTIMEDIA ROOMS, OPEN TO ALL CENTRES LINKED TO THE UAB^{CEI}.

The University and the centres in its environment generate vast amounts of knowledge that must be managed and shared efficiently if we want to achieve effective integration of the whole campus and also provide access to all this knowledge for students.

OBJECTIVES: A5 AND D3

INDICATORS: Number of users each year of the Knowledge Management Centre.

Action 7



SET UP AGREEMENTS WITH THE ORGANISATIONS LINKED TO THE UAB^{CEI} PROJECT TO DRIVE NEW ENTREPRENEURSHIP INITIATIVES AMONG THE STUDENT BODY.

The aim is to drive students' and researchers' capacity for innovation and entrepreneurship. The UAB offers courses in conjunction with the ACCIÓ Technological Springboard Network's School of Entrepreneurs. Together with the Fundación Bancaja, we have created the "Bancaja Chair in Young Entrepreneurs-UAB". This proposal aims to extend this kind of partnership to the other organisations in the UAB^{CEI}.

OBJECTIVES: A6

INDICATORS: Number of students enrolling in business start-up courses.

Action 8



MAKE IMPROVEMENTS TO THE FACULTY OF EDUCATION FACILITIES.

In order to improve the quality of teaching on campus, this plan also comprises improvements to some of the physical teaching areas. These include the classroom buildings of the Faculty of Education.

OBJECTIVES: A7

INDICATORS: Square metres of surface area renovated and/or extended.

Action 9



CARRY OUT WORK TO IMPROVE TEACHING QUALITY AND CREATE SPACES IN WHICH TO FOSTER CROSS-DISCIPLINARY RELATIONS – IMPROVEMENTS RELATING TO HEALTH AND SAFETY, ACCESSIBILITY, MANAGEMENT OF AGRICULTURAL/FORESTED LAND AND SUSTAINABLE ENERGY USE IN UNIVERSITY BUILDINGS AND TEACHING UNITS OF THE FACULTY OF MEDICINE.

Adapting teaching to the new EHEA framework requires changes in the way our spaces are structured. The UAB intends to make adaptations to numerous campus areas to improve the quality of education. This action involves improving the accessibility of buildings and furthering integration of the disabled, as well as improving the accessibility, layout, environmental aspects and general quality of the campus.

OBJECTIVES: A7, C2 AND D6.

INDICATORS: Square metres of surface area improved and adapted.

Action 10

TAKE AN ACTIVE PART IN THE CREATION OF THE NEW TEACHING AND RESEARCH COMPLEX AT THE HOSPITAL DE LA SANTA CREU & SANT PAU'S MODERNIST SITE.

To achieve teaching excellence in specific fields, the UAB can use this action to temporarily prioritise the fields of social sciences, biomedicine and health sciences. The adaptation project plans to restore a set of historic pavilions on this Modernist style site.

OBJECTIVES: A8 AND C2

INDICATORS: Number of credits taught in the new complex.

Action 11

CO-FUNDING OF AN OVERSEAS TRAINING PROGRAMME FOR DOCTORS WHO HAVE COMPLETED AND PASSED THEIR DOCTORAL WORK WITHIN THE FIRST FOUR YEARS, TO INCENTIVISE COMPLETION OF DOCTORATES.

According to data relating to students who presented their theses in the academic year 2007/2008, only 14% of doctoral students currently complete their theses within 4 years. A set of measures to incentivise completion of Ph.D.s will be designed.

OBJECTIVES: A2, B3 AND B5

INDICATORS: Number of theses completed in 4 years.

4.2. Area B) SCIENTIFIC IMPROVEMENTS

Research is one of the university's key priorities and a way to make an impact on social progress and the transfer of knowledge, as stated in the Statutes of the UAB. These Statutes also point out that the UAB considers its relationship with society and the transfer of research results to society to be an essential aspect of its activity.

Research groups are the principal agents in the UAB's research actions. Traditionally, research groups were set up within departments, depending on affinities relating to areas of work and knowledge. However, the cross-disciplinary nature of many of today's scientific and social issues is increasingly leading to a "horizontal" structure of research groups. Over the last few years, the UAB has created a significant number of university research institutes and research and study centres bringing together groups from different fields and disciplines with a single scientific purpose. The UAB's internal legislation recognises these groups as basic research structures and allocates the appropriate funding for them to carry out their research work.

Within the UAB^{CEI} project Vision, the UAB aims to achieve international excellence in two specific fields, that of **nanoscience and nanotechnology, and biomedicine and biotechnology as the two strategic priority areas.**

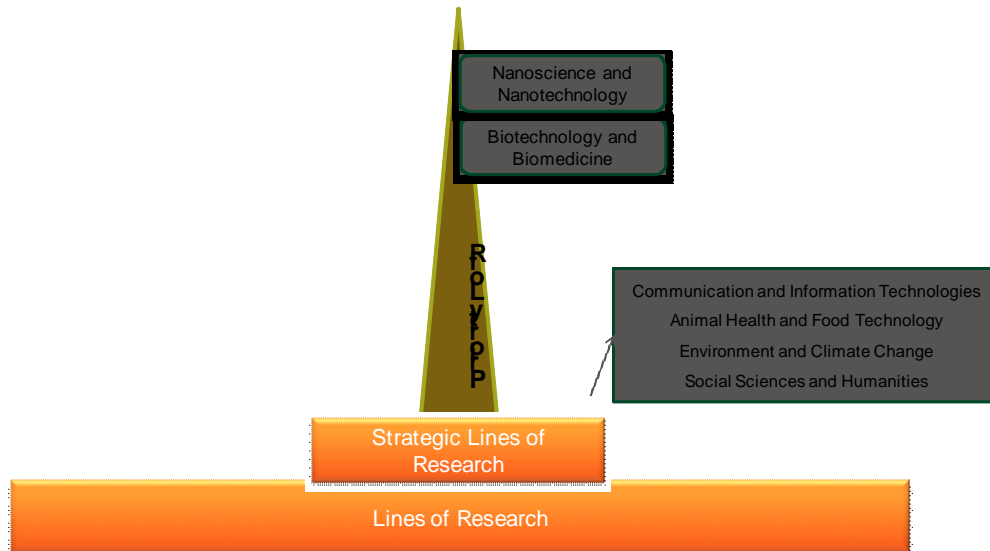


Fig.9.- The "drawing pin" model. The UAB has very solid foundations in research that include various lines of research. These support 6 strategic lines, two of which are the strategic priority ones.

In Nanoscience-Nanotechnology as a strategic priority area, research groups from UAB departments, the Barcelona Institute of Materials Science (ICMAB-CSIC), the National Centre of Microelectronics (CNM-CSIC), the Catalan Institute of Nanotechnology (ICM), the Nanoscience and Nanotechnology Research Centre soon to be set up (UAB, CSIC and Government of Catalonia) and the ALBA Synchrotron centre are unquestionably the most important Nanocluster in Spain and one of the most important in Europe.

The second area of excellence focuses on intensifying the strategic priority area of biotechnology and biomedicine, in which the UAB is an international reference point, by consolidating three new projects: the Institute of Predictive and Personalised Medicine for Cancer; the recognition and development of the ICTS Mouse-Clinic in the Centre of Animal Biotechnology and Gene Therapy (CBATEG); and the Agri-Genomics Centre, created in partnership with the IRTA. This strategic area covers all the research centres that conduct work closest to clinical and translational research in the university hospitals. Of these, the institutes specialising in health-related research, accredited by the Carlos III Research Institute, will be the principal linchpins of all the hospital-based research conducted with the participation of the UAB.

As mentioned above, it is worth emphasizing the potential that exists in the combination of these two strategic research areas, as new projects with a high degree of innovation are emerging in which the UAB has the elements needed to convert fields such as Nano-biomedicine and bio-informatics into future lines of research.

In addition to the two strategic areas, the UAB is a great generalist university with teaching and research activities in many fields of knowledge. The UAB's strategic areas are structured around three principal axes: biosciences and health sciences; experimental science and technology; and social sciences and humanities, with highly noteworthy activities conducted in each of these. Within these general areas there are specific lines of research that are strongly supported by the UAB because of their high level in the university, their great potential for future growth and their ability to impact on the social and regional environment. These strategic areas include Communication and Information Technology; Animal Health and Food Technology; the Environment and Climate Change; and Social Sciences and Humanities.

As well as being strategic areas for the UAB, most of these are in line with the strategy actions of the National Plan. The gradual integration of R&D centres in the UAB environment into the PRUAB will lead to the union of two powerful research communities and will also allow us to work in other important areas of the National Plan. **Current strategic research areas, and in particular the UAB's two priority areas, are in line with the strategic actions of the National Plan.**

This proposed plan aims to achieve comprehensive improvement in the quality of science. Below, we list the specific objectives of the UAB^{CEI} project that have been set to achieve improvements in this area:

- **Objective B1:** Increase research activity in priority areas.
- **Objective B2:** Increase cohesion between the centres associated with the UAB^{CEI}.
- **Objective B3:** Increase the quality of postgraduate studies, particularly research-focused studies, as well as their level of adaptation to business demand, their international nature and the number of students enrolled.
- **Objective B4:** Attract and retain teaching and research talent.
- **Objective B5:** Internationalise research.

Below is a list of the actions necessary for meeting these objectives:

Action 2



PROMOTE THE POTENTIAL OF THE *TREBALL CAMPUS* SERVICE TO LIAISE ON RECRUITMENT MATTERS WITH ORGANISATIONS LINKED TO THE UAB^{CEI} PROJECT.

See justification in section A.

Action 3



CONSOLIDATE THE PROGRAMME OF GRANTS FOR TRAINEE RESEARCH STAFF (TRS) IN CENTRES AFFILIATED TO THE UAB^{CEI} PROJECT AND PUBLICISE THIS INTERNATIONALLY.

See justification in section A.

Action 6



CREATION OF AN ENVIRONMENT FOR MANAGING SCIENCE AND TECHNOLOGY KNOWLEDGE AND FOR SHARING KNOWLEDGE RELATING TO TEACHING AND RESEARCH WORK. THIS WOULD BE A SPACE FOR COLLABORATIVE WORK, EITHER FACE-TO-FACE OR VIRTUAL, WITH STATE-OF-THE-ART MULTIMEDIA ROOMS, OPEN TO ALL CENTRES LINKED TO THE UAB^{CEI}.

See justification in section A.

Action 11



CO-FUNDING OF AN OVERSEAS TRAINING PROGRAMME FOR DOCTORS WHO HAVE COMPLETED AND PASSED THEIR DOCTORAL WORK WITHIN THE FIRST FOUR YEARS, TO INCENTIVISE COMPLETION OF DOCTORATES.

See justification in section A.

Action 12



SET UP SYSTEMS BY WHICH TO FULLY INTEGRATE THE UAB, UAB^{CEI} PROJECT-AFFILIATED ORGANISATIONS AND AFFILIATED RESEARCH STAFF.

A number of measures will be necessary in the context of this action: to adapt all the partnership agreements signed between the UAB and its associated organisations; to create a census of researchers transferring between institutions; to consolidate aggregate data collection; to consolidate linkage between the information in the Standard Curriculum Vitae (FECyt) the scientific output available on Open Access (DDD); to create monitoring mechanisms for proper protection and use of research results; to set up the UAB Research website: a look at the UAB's scientific output.

OBJECTIVES: B2, E1 AND E2

INDICATORS: Indexed publications.
Number of researchers incorporated following scientific quality criteria.

Action 13



SET UP A PACKAGE OF MEASURES TO MAKE THE UAB AND ITS ENVIRONMENT AN ATTRACTIVE PLACE FOR RESEARCHERS FROM OTHER INTERNATIONAL INSTITUTES. ADDITIONALLY, TO SET UP INCENTIVE SYSTEMS TO INTENSIFY RESEARCH ACTIVITY.

These measures include funding to support the first two years of R+D+i activities of new researchers; create an incentives system that is sufficiently flexible to meet research group requirements (equipment, trainee staff, space, etc.); and to set up direct funding for well-established groups.

OBJECTIVES: B1, B4 AND B5

INDICATORS: Amount of increase in lines of research
Indexed publications in first quartile
Number of European projects

Action 14



BUILD THE RESEARCH MODULE BIOCAMPUS (PHASES IIB AND III)

In response to the specific needs of research groups and to incentivise the creation of spin-off companies, this action involves the completion or start of operations of a number of module-based buildings for flexible occupation. This infrastructure will principally be for centres, research institutes and spin-off companies.

OBJECTIVES: B1, E1, E4 and E5

INDICATORS: Number of spin-off companies in the field of biotechnology
 Amount of increase in lines of research
 Number of researchers incorporated following scientific quality criteria

Action 15



ESTABLISH CONDITIONS FOR THE USE, IN THE BEST CONDITIONS, OF THE CAMPUS TECHNICAL AND SCIENTIFICAL SERVICES AND DISSEMINATION OF THE ICTS SERVICES TO THE UAB'S PARTNERS

The UAB offers outstanding scientific/technical services and has various ICTS. It is vital to offer use of these services to all members of the UAB^{CEI}, thereby achieving a return on the investment on buildings and equipment, facilitating the research conducted by campus-based groups and making a positive impact on the unity of UAB^{CEI} participants.

OBJECTIVES: B1, E1, E2 and E4

INDICATORS: Number of users of scientific/technical services
 Number of users from within the UAB environment

Action 16



CREATE A SCIENTIFIC AND TECHNOLOGICAL ACADEMIC-SOCIAL FORUM FOR ALL UAB^{CEI} PARTICIPANTS IN WHICH THE UAB'S MAJOR RESEARCH AREAS ARE PRESENTED AND DISCUSSED.

It is essential for the project and the UAB's strategy to set up communication systems between all the organisations linked to the UAB^{CEI} project. This forum would ensure the existence of this channel of communication and would allow us to detect strengths and weaknesses and thereby help us carry out any necessary improvement actions.

OBJECTIVES: B2 and E1

INDICATORS: Number of forum meetings
Number of new joint initiatives

Action 17



CARRY OUT MEDIATION ACTIONS TO FACILITATE EMPLOYMENT, SUCH AS WORK EXPERIENCE, AND TO FURTHER DRIVE THE ACTIVITIES OF THE DOCTORS' CROSS-DISCIPLINARY TRAINING UNIT.

Many of the UAB's postgraduate programmes already offer the possibility of gaining work experience with a company (e.g., the CITIUS Programme). With these proposed activities, the intention is to increase the number of work experiences.

OBJECTIVES: B3 and E3

INDICATORS: Number of work experiences/internships in companies.

Action 18



REINFORCE INFORMATION ON AND PUBLICITY OF JUAN DE LA CIERVA-TYPE RECRUITMENT DRIVES.

One of the channels that the UAB has used to boost the internationalisation of its staff and to attract new talent is the promotion of programmes such as *Juan de la Cierva* or *Ramon y Cajal*. It is necessary, then, to reinforce the information and dissemination of these recruitment drives and coordinate them with future departmental funding, thereby guaranteeing the continuity of these positions.

OBJECTIVES: B4 and B5

INDICATORS: Number of researchers incorporated following scientific quality criteria.

Action 19

FOSTER AND INCENTIVISE THE INTERNATIONAL DIMENSION OF THE UAB THROUGH MEASURES TO IMPACT ON PARTICIPATION IN THE VII FRAMEWORK PROGRAMME AND IN EUROPEAN AND INTERNATIONAL ORGANISATIONS.

The UAB, together with the universities of the A4U alliance, recently set up an office in Brussels with the intention of having a stronger role in the European Union organisations located there. This office and the OTRI (Research Results Transfer Office) will be carrying out the following activities: creation of an inventory of European platforms and participant staff; encouraging the participation of researchers in committees and panels of experts; increasing the UAB presence in European forums; carrying out publicity campaigns and training programmes on the VII Framework Programme.

OBJECTIVES: B5

INDICATORS: Number of European projects presented.
 Number of European projects coordinated.
 Number of researchers on European panels and committees.

Action 20

ORGANISE AWARDS FOR RESEARCH EXCELLENCE FOR RESEARCHERS SHOWING THE MOST OUTSTANDING RESULTS UNDER CRITERIA RELATING TO INNOVATION, ORIGINALITY AND APPLICABILITY.

The UAB awards and acknowledges the best academic contributions made by its researchers, through a PREI award for research excellence. This award will be continued, due to the positive results it has obtained to date.

OBJECTIVES: B1, B5, E1 and E5

INDICATORS: Indexed publications in first quartile of impact factor.
 Nº of researchers incorporated following quality criteria.

Action 21

PROMOTE AND INCENTIVISE TRAINEE AND FULL RESEARCH STAFF MOBILITY.

This action includes both mobility to overseas institutions and mobility deriving from strategic agreements with other Spanish universities, as is the case with the mobility programme in the A4U framework.

OBJECTIVES: B4, B5 and F6

INDICATORS: Nº of researchers on work experience abroad.
 Nº of researchers from other institutions.

4.3. Area C) TRANSFORMATION OF THE CAMPUS TO DEVELOP AN INTEGRATED SOCIAL MODEL

The social model of campus life is one of the strengths of the UAB. The concept of a university community, with a large residential area for students and lecturers, large public green spaces, sports facilities, shops, a transport network, pre-university schools, healthcare, etc., is clearly evident at the UAB campus, so much so that it has many of the characteristics of a small town: a choir, an orchestra, a traditional human tower-building club, and sports teams that participate in local and national competitions.

The UAB is one of the few Spanish universities sited on a campus with an infrastructure created exclusively for the purpose of university life. Integrated into the natural environment (with more than 189 hectares of green spaces, forest, shrubbery and landscaped gardens), the UAB offers the university community a range of services that cover all the needs of academic life, leisure and daily life. It has a hall of residence with 2,200 places for students and lecturers, which has been extended this year with the addition of 432 new places; a residential area with medium-term housing for lecturers, administrative and service staff and their families; a four star hotel with 104 rooms; 15 restaurants spread across the campus; 15 libraries with over 1 million books; wifi zones; a language service offering courses in both foreign languages and Spanish and Catalan for foreign students; a post office and three bank branches with cash points spread across the campus; a supermarket; a square in the centre of the campus with shops, restaurants and a chemist's; and a dedicated building for arts events, large-scale meetings and support for university members.




The current strategy plan aims to improve the overall social model of the campus, expanding the present model of integration out to the centres, companies and organisations of the UAB environment.

To achieve improvement in the social model of the campus, focusing on the integration of centres, companies and organisations in the areas that are linked to the UAB, the following specific objectives have been set:

- **Objective C1:** Increase the provision of part-time jobs for students, on campus and in other centres in the UAB^{CEI} environment.
- **Objective C2:** Improve the quality of various aspects of the UAB^{CEI} campus, focusing on developing an integrated social model, through improvements to the layout design and through architectural improvements.
- **Objective C3:** Increase the visibility and recognition of the art work found on the UAB^{CEI} campus and increase this artistic heritage.

- **Objective C4:** Improve the ICT infrastructure of the UAB^{CEI} campus and provide services worthy of the information society.
- **Objective C5:** Promote the educational and social value of the free spaces in the UAB^{CEI} campus buildings, as well as the agricultural and forested areas and the environmental infrastructure.
- **Objective C6:** Optimize the use of facilities that can be shared between Sabadell, Cerdanyola del Vallès, Sant Cugat del Vallès and the UAB^{CEI} campus through actions to foster local citizen participation in UAB activities and student participation in local activities.
- **Objective C7:** Improve mobility on campus and achieve full accessibility for the disabled¹².
- **Objective C8:** Increase the number of cooperation and development projects.
- **Objective C9:** Ensure completion of action plans promoting gender equality.

Below is a list of the actions necessary to meet these objectives. A point to bear in mind is that a substantial part of the campus transformation also focuses on constructing new buildings and research facilities.




Action 3

CONSOLIDATE THE PROGRAMME OF GRANTS FOR TRAINEE RESEARCH STAFF (TRS) IN CENTRES AFFILIATED TO THE UAB^{CEI} PROJECT AND PUBLICISE IT INTERNATIONALLY.

See justification in section A.

¹² Objective C7 coincides with Objective F2. It is listed twice in order to include it in both of the areas of the Ministerial Order to which it is relevant.

Action 9



CARRY OUT WORK TO IMPROVE TEACHING QUALITY AND CREATE SPACES IN WHICH TO FOSTER CROSS-DISCIPLINARY RELATIONS – IMPROVEMENTS RELATING TO HEALTH AND SAFETY, ACCESSIBILITY, MANAGEMENT OF AGRICULTURAL/FORESTED LAND AND SUSTAINABLE ENERGY USE IN UNIVERSITY BUILDINGS AND TEACHING UNITS OF THE FACULTY OF MEDICINE.

See justification in section A.

Action 10



TAKE AN ACTIVE PART IN THE CREATION OF THE NEW TEACHING AND RESEARCH COMPLEX AT THE HOSPITAL DE LA SANTA CREU & SANT PAU'S MODERNIST SITE.

See justification in section A.

Action 22



SET UP A PROGRAMME TO PRESENT THE ARTISTIC HERITAGE OF THE UAB ON THE UAB WEBSITE AND ON INFORMATION PANELS ON CAMPUS.

This action will give the campus an artistic dimension and create something of a campus-museum to reinforce its educational dimension.

OBJECTIVES: C3

INDICATORS: Number of visitors to art collection web page

Action 23



IMPROVE ICT INFRASTRUCTURE AND TECHNOLOGY TOOLS USED FOR TEACHING AND RESEARCH: SYSTEMS HOUSING; WIFI INTERNET ACCESS FOR CENTRES LINKED TO THE UAB^{CEI} PROJECT; DEVELOPMENT OF INFORMATION-SOCIETY TOOLS (SINGLE SIGN ON, E-GOVERNMENT, SOCIAL NETWORKING, INFORMATION SYSTEMS INTEGRATION, VIRTUAL LEARNING AND TEAMWORK SPACES AND OTHER TECHNOLOGIES).

The purpose of this action is to improve ICT infrastructure. It will also mean advances in teaching quality, research quality and in particular in the integration of all the UAB^{CEI} project centres.

OBJECTIVES: C4, D3 and F1

INDICATORS: Allocated housing space
 Number of wifi connections set up
 Number of users of new social networks
 Number of participants in virtual learning spaces
 Number of e-administration procedures completed

Action 24



FURNISH CAMPUS AREAS AS EDUCATIONAL SPACES WITH INFORMATION PANELS, EXHIBITIONS, ETC. AND ADAPT SCIENCE AND TECHNOLOGY FACILITIES FOR HOSTING VISITS.

This action aims to put a range of innovative learning methods into action, promoting the educational value of the campus, its buildings, facilities, open spaces and areas of nature as a cultural asset.

OBJECTIVES: C5 and D6

INDICATORS: Number of educational spaces
Number of visitors / users

Action 25



CONSOLIDATE THE ARTS AND CULTURE ON OFFER AND CREATE A COORDINATED AND STABLE PROVISION OF GENERAL SCIENTIFIC EDUCATION ON CAMPUS AND PROMOTE IT TO LOCAL CITIES AND TOWNS.

This action will increase the use of the campus's cultural resources by local residents and improve their interaction with the university.

OBJECTIVES: C3 and F6

INDICATORS: Number of cultural events
Number of public science events
Number of participants from local towns

Action 26



PROMOTE THE RANGE OF SPORTS FACILITIES ON CAMPUS ACROSS ALL THE CENTRES LINKED TO THE PROYECTO UAB^{CEI} PROJECT AND IN LOCAL COMMUNITIES.

This action will increase the use of campus facilities by local residents and will integrate staff across all centres linked to the UAB^{CEI}.

OBJECTIVES: C3 and F6

INDICATORS: Number of external users of the UAB's Physical Activity Service (SAF)

Action 27

INCREASE PROMOTIONS AND DISCOUNTS FOR STAFF OF CENTRES LINKED TO THE UAB^{CEI} AT SHOPS, SPORTS FACILITIES AND ARTS FACILITIES IN THE LOCAL AREA.

This action aims to increase the participation of the university community in local events.

OBJECTIVES: C6

INDICATORS: Volume of promotions and discounts

Action 28

IMPLEMENT ACTIONS OF THE UAB MOBILITY PLAN.

The UAB has a mobility plan to incentive the use of public transport and the more sustainable, safer and socially integrating forms of mobility; increasing bicycle lane connectivity with local towns; and eliminating architectural obstacles and barriers are just some of a long list of specific actions.

OBJECTIVES: C7 and F2

INDICATORS: Number of architectural barriers
Number of public transport users
Number of people travelling by bicycle

Action 29

INCREASE TO 0.6% THE FUNDING TO DEVELOPMENT PROJECTS ALLOCATED BY THE UAB SOLIDARITY FUND.

The *Fundación Autònoma Solidaria* coordinates a programme to manage the participation of the university community in work camps and other development work experiences in developing countries. In 1994, the UAB created a solidarity fund from the university's own revenue which is used to finance a call for 6 charity initiatives proposed by the community itself. The action aims to increase this fund and thereby increase the number of aid projects.

OBJECTIVES: C8

INDICATORS: Volume of funding for charity projects
Number of charity projects
Number of volunteer, charity and aid programmes in which the UAB participates.
Number of students and teaching, research, administrative and service staff participating in volunteer programmes.

Action 30

RECRUIT SUPPORT STAFF (THROUGH GRANTS AND VOLUNTEERING DRIVES) FOR THE UAB EQUALITY OBSERVATORY.

In 2006, the UAB pioneered an action plan for gender equality. This action aims to accelerate roll-out of Plan 2 of Action7, which covers the four year period 2008-2012. The Equality Observatory is also in charge of ensuring that no discrimination occurs at the UAB on grounds of gender, disability or financial hardship.

OBJECTIVES: C9

INDICATORS: Percentage of men and women in the various types and categories of job

4.4. Area D) IMPROVEMENTS AIMED AT IMPLEMENTING AND ADAPTING TO THE EHEA

Implementation of the EHEA by working for high quality education is one of the main aspects of this initial focus. Six years ago, **the UAB started a pilot programme of EHEA subjects across 17 degree courses**, including training courses for lecturers, and this gave very valuable experience with which to begin implementation in all the other degree courses. Training of lecturers in the EHEA methods and adaptation of classrooms and other spaces for teamwork and tutorials are some of the actions proposed and budgeted for in the current plan. From the academic year 2009-2010 the UAB is teaching 47 degree courses that have been completely adapted to the EHEA and intends to complete adaptation of all courses during the academic year 2010-2011.

To improve roll-out and the adaptation of UAB teaching to the EHEA, this UAB^{CEI} project strategy plan sets out the following specific objectives in this action area:

- **Objective D1:** Improve the level of internationalisation of the academic provision through measures relating to language provision and improvements to the residential environment.
- **Objective D2:** Improve UAB^{CEI} campus areas to adapt them to the new EHEA teaching methods.
- **Objective D3:** Adapt technology tools to meet the needs resulting from new teaching and learning methods within the context of the EHEA.

- **Objective D4:** Attract foreign students and researchers.
- **Objective D5:** Increase employment opportunities for graduates and work experience opportunities for students at the UAB and at other organisations in the project.
- **Objective D6:** Promote the educational and social value of free areas in the campus buildings as well as of nature areas on campus and nearby, and adapt current special spaces into innovative classrooms, such as radio laboratories, cinemas and theatres, for example.

Below is a list of actions to carry out in order to meet these objectives.

Action 1	
<p>SET UP A FUND OF 400 GRANTS TO STIMULATE TEACHING IN ENGLISH BY FULLY SUBSIDISING LANGUAGE COURSES FOR LECTURERS</p>	
<p>See justification in section A.</p>	
Action 2	
<p>CONSOLIDATE THE PROGRAMME OF GRANTS FOR TRAINEE RESEARCH STAFF (TRS) IN CENTRES AFFILIATED TO THE UAB^{CEI} PROJECT AND PUBLICISE IT INTERNATIONALLY.</p>	
<p>See justification in section A.</p>	
Action 3	
<p>PROMOTE THE POTENTIAL FOR RECRUITMENT MEDIATION BY THE <i>TREBALL CAMPUS</i> SERVICE IN UAB^{CEI} PROJECT-LINKED ORGANISATIONS.</p>	
<p>See justification in section A.</p>	
Action 6	
<p>CREATION OF AN ENVIRONMENT FOR MANAGING SCIENCE AND TECHNOLOGY KNOWLEDGE AND FOR SHARING KNOWLEDGE RELATING TO TEACHING AND RESEARCH WORK. THIS WOULD BE A SPACE FOR COLLABORATIVE WORK, EITHER FACE-TO-FACE OR VIRTUAL, WITH STATE-OF-THE-ART MULTIMEDIA ROOMS, OPEN TO ALL CENTRES LINKED TO THE UAB^{CEI}.</p>	
<p>See justification in section A.</p>	

Action 9



CARRY OUT WORK TO IMPROVE TEACHING QUALITY AND CREATE SPACES IN WHICH TO FOSTER CROSS-DISCIPLINARY RELATIONS – IMPROVEMENT RELATING TO HEALTH AND SAFETY, ACCESSIBILITY, MANAGEMENT OF AGRICULTURAL/FORESTED LAND AND SUSTAINABLE ENERGY USE IN UNIVERSITY BUILDINGS AND TEACHING UNITS OF THE FACULTY OF MEDICINE.

See justification in section A.

Action 23



IMPROVE ICT INFRASTRUCTURE AND TECHNOLOGY TOOLS USED FOR TEACHING AND RESEARCH: SYSTEMS HOUSING; WIFI INTERNET ACCESS FOR CENTRES LINKED TO THE UAB^{CEI} PROJECT; DEVELOPMENT OF INFORMATION-SOCIETY TOOLS (SINGLESIGNON, E-GOVERNMENT, SOCIAL NETWORKING, INFORMATION SYSTEMS INTEGRATION, VIRTUAL LEARNING AND TEAMWORK SPACES AND OTHER TECHNOLOGIES).

See justification in section C.

Action 24



FURNISH CAMPUS AREAS AS EDUCATIONAL SPACES WITH INFORMATION PANELS, EXHIBITIONS, ETC. AND ADAPT SCIENCE AND TECHNOLOGY FACILITIES FOR HOSTING VISITS.

See justification in section C.

Action 31



OPEN UP THE THEATRE AND CINEMA TO TEACHING USES; ALSO THE TV STUDIOS AND RADIO STUDIOS IN THE FACULTY OF MEDIA STUDIES AS INNOVATIVE CLASSROOMS FOR OTHER FIELDS AS WELL AS FOR COMMUNICATION STUDIES.

Adapting teaching methods to the EHEA requires setting up innovative classroom spaces. The UAB has spaces that, with an appropriate change of use, can be turned into innovative classrooms. These include the Theatre, and the Cinema on the *Plaça Cívica* and the TV and Radio studios in the Faculty of Communication Sciences.

OBJECTIVES: D6

INDICATORS: Number of teaching activities carried out in newly-adapted spaces.

Action 32

BROADEN THE RANGE OF ACCOMMODATION AT THE *VILA UNIVERSITARIA* HALL OF RESIDENCE WITH ALMOST 200 NEW PLACES. CREATE A HALL OF RESIDENCE FOR STUDENTS AND RESEARCHERS AT THE TEACHING UNIT OF THE HOSPITAL DE LA SANTA CREU I SANT PAU, FOR SHORT-TERM VISITS FOR TEACHING OR HEALTHCARE PROVISION.

Increasing accommodation will facilitate the influx of international students.

OBJECTIVES: D1

INDICATORS: Places in halls of residence.

4.5. Area E) TRANSFER OF KNOWLEDGE AND RESEARCH RESULTS TO THE BUSINESS SECTOR

Transfer of UAB-generated research results and knowledge to society is one of the UAB's missions and one of the priorities of the UAB^{CEI} proposal.

For many years, UAB departments have been carrying out knowledge transfer activities, from research deals to projects, publications, journals and other forms of dissemination. An important step in the direction of intensifying transfer actions was the creation of the UAB Research Park (*Parc de la Recerca* or PRUAB) in 2007. One of its main objectives is to facilitate the transfer of technology and knowledge to society. With the PRUAB, a working model has been created that is based on capitalising on and reinforcing the capacity and experience of existing structures and on putting the necessary measures in place to coordinate the entire transfer work under a single policy direction.

Because of its policy to recruit foreign researchers, the UAB has a significant number of researchers from other countries who have come through recruitment drives such as those of the PEOPLE programme of the EU's VII Framework Programme, *Juan de la Cierva*, *Beatriu de Pinós*, *Ramon y Cajal*, *Serra Hunter*, ICREA or UAB- or Ministry-sponsored drives to recruit Trainee Research Staff.

The R&D institutes and centres have a high number of foreign researchers. Integration of all these institutions will lead to increased internationalisation of all of these as a whole. In particular, it is predicted that the ALBA Synchrotron will benefit from a marked rise in researchers, many of whom will be foreign and affiliated to the UAB.

The UAB also participates actively in European technology platforms such as the Integral Satcom Initiative (ISI) and Mobile and Wireless Communications (eMOBILITY).

To achieve improvements in the transfer of knowledge and research results to the business sector, the following specific objectives have been set:

- **Objective E1:** Ascertain, structure and evaluate more efficiently UAB^{CEI}-generated knowledge.
- **Objective E2:** Consolidate and expand PRUAB.
- **Objective E3:** Foster entrepreneurship training and the entrepreneurial culture on campus.
- **Objective E4:** Encourage the use of scientific/technical services by improving their infrastructure.
- **Objective E5:** Support innovative, high-impact and transferable research.
- **Objective E6:** Drive the creation of spin-off companies.

Below is a detailed explanation of the proposed actions to improve the transfer of knowledge and research results to the business community.

Action 20



ORGANISE AWARDS FOR RESEARCH EXCELLENCE FOR RESEARCHERS SHOWING THE MOST OUTSTANDING RESULTS UNDER CRITERIA RELATING TO INNOVATION, ORIGINALITY AND APPLICABILITY.

See justification in section B.

Action 33



PACKAGE OF MEASURES TO INCREASE THE VISIBILITY OF OUR TECHNOLOGY PROVISION AND PARTNERSHIP OPPORTUNITIES.

The following activities are crucial: publicise opportunities for technology partnerships; promote our range of technology provision at conferences and international events; set up coordination events with businesses.

OBJECTIVES: B2 and E1

INDICATORS: Number of hits/queries from UAB^{CEI} researchers on the PRUAB website.
 Number of agreements and licenses.
 Amount of revenue per license.

Action 34

SET UP A BUSINESS INCUBATOR IN THE PRUAB'S EUREKA BUILDING.

The business incubator with R+D+i activities is a key component in the innovation system. It will provide the necessary space and support for newly-created spin-off companies and specific applied research projects conducted in conjunction with businesses.

Over recent years, the PRUAB has created more than 30 spin-offs, many of which are no longer appropriately housed as they are located in temporary spaces or within current university departments.

The upcoming completion of the Eureka building, situated in the PRUAB (and scheduled for the end of 2009) will provide a 1,370 m² incubation space. This space will be made available to established companies interested in furthering their technology innovation or their research, as well as to spin-off companies.

OBJECTIVES: B1, C1, E2, E3 and E6

INDICATORS: Number of companies located in the Eureka building.
Number of "external" companies located in the Eureka building.

Action 35

INCREASE OF KNOWLEDGE TRANSFER AND ASSESSMENT ACTIONS

It is necessary to reinforce the actions that are already being carried out in the context of knowledge assessment and transfer: technology-trend detection, market research, fostering knowledge transfer in social sciences and humanities, backing the creation of EBTs and developing partnerships to reinforce a "pre-seed" system/fund, support the incorporation of knowledge-transfer specialists, partnership programme with the A4U.

OBJECTIVES: E1 and F6

INDICATORS: Number of license agreements.
Number of spin-offs created.
Number of entries/queries from UAB^{CEI} researchers

Action 36

**PROMOTE ENTREPRENEURSHIP ON CAMPUS.**

Looking ahead to future research and knowledge transfer, it is important to instil a spirit of entrepreneurship among campus students and future researchers. This involves activities such as specific agreements between organisations participating in the UAB^{CEI}, a shared model for masters students, integrating patenting training into UAB degree courses.

OBJECTIVES: E3 and E6

INDICATORS: Number of license agreements.
Number of spin-offs created.
Number of entries/queries from UAB^{CEI} researchers.

Action 37

**DYNAMIC NUCLEAR POLARIZER (DNP).**

Associated to a system that produces images or in-vivo NMR spectroscopy (7 T Bruker BioSpec) allowing molecular imaging to be obtained and to facilitating the detection of metabolic changes in living organisms. The principal users will be researchers in the fields of biomedicine and biotechnology.

OBJECTIVES: B1, B4, E1 and E4

INDICATORS: Number of license agreements.
Number of spin-offs created.
Amount of revenue per license.

Action 38

**PROTEOMIC MASS SPECTROMETER (CLIMATE).**

A MAT253 mass spectrometer and a Kiel IV sample preparation system to support environmental research and, fundamentally, to support projects relating to marine paleoclimatology and oceanography, thus making it possible to maintain UAB leadership in the environmental field and in climate-change studies in particular.

OBJECTIVES: B1, B4, E1 and E4

INDICATORS: Number of projects awarded.
Number of requests for services.

Action 39

**PROTEOMIC MASS SPECTROMETER (BIO).**

This acquisition forms part of the process to strengthen research into proteomics and structural biology, of great importance in the UAB environment because of the Synchrotron and the Centre for Structural Biology and Proteomics, and it will greatly further capacity for *de novo* peptide sequencing, speed of analysis, identification of post-translational modifications and a proteomics approach, top-down proteomics or MALDI-imaging, with great potential in the search for biomarkers and clinical and medical applications.

OBJECTIVES: B1, B4, E1 and E4

INDICATORS: Number of projects awarded.
Number of requests for services.

Action 40

**CREATION OF AN INTEGRATED ANIMAL LABORATORY SERVICE LINKED TO THE UAB ANIMAL HOUSING SERVICE.**

Currently, in collaborative projects in the fields of biotechnology, biomedicine and nanotechnology (strategic priority fields for both the UAB, the National R+D+i Plan and the VII Framework Programme), studies are conducted *in vivo*. Current legislation on the use of animals for research purposes has made it necessary to redesign the facilities. For this to happen, it is essential to have animal housing facilities that meet optimum conditions as well as more standardized associated laboratories. The aim is to develop an Integrated Animal Laboratory Service, an area combining scientific knowledge and lab animal science methods – the ideal space for developing R+D+i projects requiring the use of lab animals with the highest standards of quality and animal welfare.

OBJECTIVES: B1, E4 and E5

INDICATORS: Number of projects awarded.
Number of requests for services.

Action 41


ACQUISITION OF A FIELD EMISSION SCANNING ELECTRON MICROSCOPE FOR THE MICROSCOPY SERVICE.

This action is linked to the previous, as *in-vivo* studies require a field-emission scanning electron microscope (SEM). The Microscopy Service has two conventional SEMs. These microscopes do not have an adequate level of resolution for solving the specific problems faced by many researchers and projects currently in progress. For this reason, we believe that it is essential to acquire another electronic microscope.

Because there is no other ultra-high resolution SEM in Catalonia, the innovative nature of this technology would be highly beneficial to departments and research centres in the PRUAB, leading to opportunities to publish in high-impact journals and to patent some of the applications or results. Both the Catalan Institute of Nanotechnologies (ICN) and the Barcelona Institute of Materials Science (ICMAB) have expressed interest in using the equipment.

OBJECTIVES: B1, E4 and E5

INDICATORS: Number of projects awarded.
Number of requests for services.

Action 42


TRAINING ACTIVITIES AND AWARENESS-RAISING THROUGH AN AWARD FOR THE BEST INVENTION AND A GUIDE ON "WHAT AND HOW TO PATENT".

The award will allow us to increase the number of communications delivered to the OTRI (Research Results Transfer Office) and to increase awareness of how to communicate and protect research results. The Guide will be distributed among researchers in the organisations involved in this proposal and will be organised into specifically themed chapters (Chemistry, Pharmaceutical Science, Biotechnology, etc.)

OBJECTIVES: E1, E3 and E5

INDICATORS: Number of entries/queries from researchers.
Number of license agreements.
Number of spin-offs created.
Number of requests for services.

Action 43

IMPROVE PROCESSES FOR MANAGING RESEARCH RESULTS

In order to streamline and increase efficiency in how information on intellectual property is managed, we believe it is necessary to adapt the Data Base (INTEUM) and to upgrade the application. It is also necessary to improve professional services, work flows, internal rules and processes.

OBJECTIVES: E1, E3 and E5

INDICATORS: Number of research results evaluated.
 Number of patents registered
 Number of technology offers disseminated
 Number of contracts with businesses
 Amount of revenue per license

4.6. Area F) INTERACTION BETWEEN THE CAMPUS AND ITS LOCAL AREA

In terms of the environment in the immediate surroundings of the university, that is, the network of centres and research institutes that make up the PRUAB, the project proposes a series of measures aimed at achieving a collaborative network with high added value.

The UAB has had the good fortune (or reaped the benefits of the wise decisions taken by its founders) to be located in what has become the most dynamic area in Catalonia¹³.

About twenty years ago, the UAB set out a strategic-action vector by creating its own research institutes and consortiums with other institutes such as the CSIS, the IRTA and the Government of Catalonia on the Bellaterra Campus. This policy has been upheld by all the subsequent Rectors' teams and today **the campus is home to several R&D centres of international prestige**, with a legal status separate from the UAB.

The purpose of creating the UAB Research Park (PRUAB) is to catalyse the integration of this entire group of R&D centres that is unique in Spain and to make their knowledge transfer more efficient. This concentration of centres on campus is beginning to harvest its first fruits in the form of collaboration in postgraduate teaching and research and in optimal use of scientific and technical services and knowledge-transfer support services. Several of the actions in this area are intended to be funded by the CEI Programme. The key objective for the UAB over the next

¹³ According to indices reported by the *Activa Prospect* consultancy for the 2004-2008 period.

four years (corresponding to the UAB^{CEI} plan) is to integrate all this potential and to manage and guide its emerging value.

However, the UAB's actions do not end with the level of integration to be achieved over the next four years. The UAB's spirit of innovation and perfectionism, which has led the university to make continuous improvements to teaching, to its drive for excellence in research, to efficiency in transferring knowledge and in organisational administration, is not enough for the UAB. The organisation cannot content itself with holding a passive position in the evolution of an environment that has the potential to become a centre for R&D, a social and economic centre of far-reaching importance. It is for this reason that **the UAB has a long-term future perspective and is setting out its actions for the next four years with its sights set on 2020.** The role of the UAB is not simply to reflect upon itself. Its role is to promote and lead the process that will develop its environment and to act as the catalyst for this development.

Evidence of this ambition to consolidate this roadmap lies in the charter signed by all the PRUAB-affiliated R&D centres and institutes, many of which have been in existence and have worked with the UAB for over a decade. Other organisations and businesses, some of which have no experience of working with the UAB, have signed the affiliation charter as a first step towards the creation of the UAB-30 Knowledge Cluster (Fig. 4). The CEI call for proposals has been the opportunity that has given a substantial boost to this major project.

The UAB intends to be the catalyst for an area that could potentially become the most important knowledge cluster in the Mediterranean region. This claim, which might initially appear somewhat unrealistic, is, however, the result of:

- **A long road already travelled in this direction**, the consequence of a strategy maintained by each one of the various Rectors' teams that have governed the UAB over the last 20 years;
- **The consolidation of an R&D environment that is unique in Spain**, made up of the current centres and institutes; the new centres soon to be opened (ALBA Synchrotron, CBATEG-Mouse Clinic, CIN₂, the Agri-Genomics Research Centre); and the plans to create new institutes and centres in the area where the ALBA park is located;
- **A powerful environment of high-tech companies**, both multinationals and SMEs, and organisational and stimulus structures such as the Vallès Technology Park and the recently opened ESADE-Creópolis; and
- **A region that interconnects with it from all sides**, with a tremendous communications network soon to be enhanced by the future AVE high speed train to France. As previously mentioned, this unique area has recently been classed as the most dynamic area in Catalonia.

The current strategy plan aims to improve the interaction between the campus and its environment. To achieve this, the following specific objectives have been set within this area of activity:

- **Objective F1:** Deepen integration between the centres that make up the UAB's R&D environment and consolidate the UAB as a CEI campus, increasing agreements and support for this initiative from local organisations.
- **Objective F2:** Improve mobility and make the campus fully accessible to the disabled community⁹.
- **Objective F3:** Achieve the participation of non-university users from local communities in UAB cultural events and sports facilities.
- **Objective F4:** Increase the participation of social organisations and neighbourhood associations from the surrounding area and also from the UAB^{CEI} centres in the process of integrating the campus into the community life of the local area.
- **Objective F5:** Make the entire university community participants in the project and promote this regionally, both on the local level (surrounding cities and towns) and at Spanish and international levels.
- **Objective F6:** Establish or strengthen alliances with other universities to carry out projects that are in keeping with the actions of the UAB^{CEI} strategy plan.

Below is a detailed description of the actions necessary to achieve these objectives.

Action 23

IMPROVE ICT INFRASTRUCTURE AND TECHNOLOGY TOOLS USED FOR TEACHING AND RESEARCH: SYSTEMS HOUSING; WIFI INTERNET ACCESS FOR CENTRES LINKED TO THE UAB^{CEI} PROJECT; DEVELOPMENT OF INFORMATION-SOCIETY TOOLS (SINGLESIGNON, E-GOVERNMENT, SOCIAL NETWORKING, INFORMATION SYSTEMS INTEGRATION, VIRTUAL LEARNING AND TEAMWORK SPACES AND OTHER TECHNOLOGIES).

See justification in section C.

Action 25	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
<p>CONSOLIDATE THE ARTS AND CULTURE ON OFFER AND CREATE A COORDINATED AND STABLE PROVISION OF GENERAL SCIENTIFIC EDUCATION ON CAMPUS; PROMOTE THIS TO LOCAL CITIES AND TOWNS.</p>	
<p>See justification in section C.</p>	
Action 26	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
<p>PROMOTE THE RANGE OF SPORTS FACILITIES ON CAMPUS THROUGHOUT ALL THE CENTRES LINKED TO THE UAB^{CEI} PROJECT, AND IN LOCAL COMMUNITIES.</p>	
<p>See justification in section C.</p>	
Action 28	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
<p>IMPLEMENT ACTIONS PERTAINING TO THE UAB MOBILITY PLAN.</p>	
<p>See justification in section C.</p>	
Action 44	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
<p>SET UP NEW AGREEMENTS OF AFFILIATION TO THE UAB^{CEI} PROJECT WITH ORGANISATIONS AND BUSINESSES FROM THE LOCAL AREA, AND INITIATE SPECIFIC COLLABORATION PROJECTS.</p>	
<p>The UAB is very well integrated into the local area and has strong links with numerous organisations in its local environment, many of which have already expressed a high level of interest in joining the UAB^{CEI} project and in establishing a strong and lasting alliance with the university. Extending this integration is the principal pillar on which this plan rests.</p>	
OBJECTIVES:	F1
INDICATORS:	Number of affiliated organisations Number of projects initiated
Action 45	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
<p>ATTRACT R&D DEPARTMENTS FROM COMPANIES IN THE TECHNOLOGY SECTOR TO THE EUREKA BUILDING.</p>	
<p>The new Eureka Building aims to be a landmark site in the ambit of the transfer of technology to local businesses. The purpose of this action is to increase integration in technology development and innovation activities.</p>	
OBJECTIVES:	F1
INDICATORS:	Number of companies housed in the Eureka building.

Action 46

ENCOURAGE UAB GROUPS AND ASSOCIATIONS TO CARRY OUT COORDINATED ACTIVITIES WITH NEIGHBOURHOOD ASSOCIATIONS AND SOCIAL ORGANISATIONS IN THE LOCAL AREA.

The UAB currently has many initiatives for people who do not form part of the student body on official courses. This action aims to increase the participation of social organisations and neighbourhood associations in neighbouring cities and towns in the process of integrating the campus into the social life of the surrounding area.

OBJECTIVES: F4

INDICATORS: Number of relationships established with neighbourhood associations and social organisations.
Number of activities conducted.

Action 47

DRAW UP A COMMUNICATION PLAN FOR THE UAB^{CEI} PROJECT AT EVERY LEVEL, BOTH INTERNAL AND EXTERNAL, NATIONAL AND INTERNATIONAL.

The UAB's drive to be a CEI will be the main theme of the communication campaign that the organisation is preparing: printed information and publicity material, audiovisual materials, a website and general public information campaigns.

OBJECTIVES: F5

INDICATORS: Number of hits on the project website.
Number of mentions in the media.

5. The monitoring of the UAB^{CEI} Project

The UABCEI Project has been elaborated by a team of people under the strategic direction of a commission composed of members of the managing board of the university, chaired by the Rector herself. This team has been supported by a technical commission with the people responsible for all the technical areas and administrative services of the UAB bearing any relation with the project. Furthermore, an advisory commission with personalities in the UAB has been giving strategic support to the work carried out on the proposal.

A strategic plan needs a structure that monitors the project and keeps the contacts between the UAB, the alliances and the Ministry of Education.

The operating structure created for the project coordination and management would be part of the Strategic Planning and Audit Bureau of the university and would be under control by a Monitoring Commission composed of several members from the managing board led by the Rector. The main goal is to monitor to what extent the objectives are met and keep the ruling organs of the university well informed.

The Monitoring Commission is also in charge of pushing the project forward, so as to strengthen the integration of both centers and institutions that take part in it. It is necessary to create a place for discussion where all issues of interest for the members of the project can be debated and their initiatives can be carried out, such as courses, workshops, fairs, a common knowledge management tool, the project website and so on.

The project is expected to develop in the following way:

	2009				2010				2011				2012			
	Q 1	Q 2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
AREA A																
Action 1																
Action 2																
Action 3																
Action 4																
Action 5																
Action 6																
Action 7																
Action 8																
Action 9																
Action 10																
Action 11																
AREA B																
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Action 32B																
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Action 40																
Action 41																
Action 42																
Action 43																
AREA F																
Action 44																
Action 45																
Action 46																
Action 47																

6. The UAB-30 knowledge cluster. A vision of the future

The UAB's long-term goal is to promote, lead and stimulate integration, not only of the R&D centres, but of the whole production network and the social and cultural environment, in order to create the **UAB-30 Knowledge Cluster** along the B-30 axis and make it the most important cluster of its kind in the Mediterranean region.

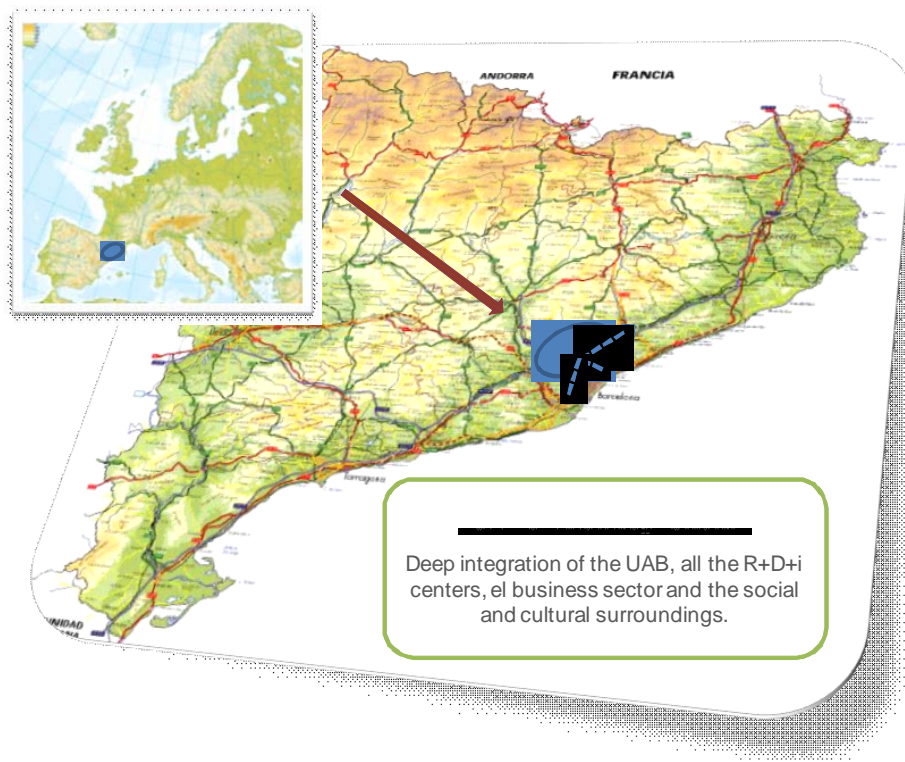


Fig.10.- In the long term, the UAB aims to lead the integration of its rich R&D environment at production, social and cultural levels, with the ultimate goal of creating the most important R&D cluster in the Mediterranean region, along the B-30¹⁴.

In the long term (beyond the timeline of the UAB^{CEI} project), the UAB is aiming for ambitious projects that will provide continuation of the short and medium term projects presented here. In this section, we present the most important of these long-term projects:

- **Promote and lead the founding of the UAB-30 Knowledge Cluster**, as a future development of the PRUAB, incorporating businesses and organisations. In fact, all 30

¹⁴ The B-30 is a major highway, approximately 15 km in length, which passes by the UAB, linking communities and the hi-tech production centres that make this area the most dynamic in Catalonia. The B-30 runs parallel to the AP-7 motorway which directly connects with France and continues southward along the entire Mediterranean coastline of Spain.

of the spin-offs created by the UAB already belong to the UAB Research Park. This Knowledge Cluster will be the result of the affiliation of all the various organisations operating in the area (PRUAB, the ALBA park, the Valles Technology Park (PTV), town councils), under the leadership of the UAB.

- **Promote the use of English at the UAB**, so that it is commonly used in the daily life of the campus, as is currently the case for the official languages, Spanish and Catalan. This development is a natural reflection of the objectives and actions described in this proposal, such as internationalisation, attracting teaching and research talent and the plans to increase the use of English in degree and postgraduate courses.
- Work to **achieve a position among the 50 top universities in Europe by 2020** in the international rankings.