CSGA - Centre des sciences du goût et de l'alimentation

Rapport Hcéres

agence d'évaluation de la recherche
et de l'enseignement supérieur

Section des Unités de recherche

AERES report on the research unit:

Centre des Sciences du Goût et de l'Alimentation

From the

CNRS

INRA

Université de Bourgogne

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Le Président de l'AERES

Didier Houssin

Section des unités de recherche

Le Directeur

Pierre Glorieux

January 2011

Research Unit

Name of the research unit: CSGA - Centre des Sciences du Gout et de l'Alimentation

Requested label: UMR CNRS, UMR_A INRA

N° in the case of renewal: UMR 6265 CNRS – 1324 INRA

Name of the director: Mr. Luc PENICAUD

Members of the review committee

Committee chairman:

Mr. Pierre-Marie LLEDO, Institut Pasteur, Paris

Other committee members:

Mr. Alan CARLETON, University of Geneva, Genève, Switzerland

Mr. Fernando LEAL-CALDERON, Institut Polytechnique de Bordeaux, France

Mr. Hely TUORILA, University of Helsinki, Finland

Mr. Remco HAVERMANS, Maastricht University, Maastricht, The Netherlands

Mr. Florian SENNLAUB, Centre de recherche des Cordeliers, Paris

Mr. Ivan RODRIGUEZ, University of Geneva, Geneva, Switzerland

Mr. Denis BURDAKOV, University of Cambridge, Cambridge, UK

Mr. Gilles TRYSTRAM, AgroParisTech, Massy, France

Ms. Catherine BELZUNG, Université François Rabelais Tours, CNU member

Ms. Carina PRIP-BUUS, Université Paris Descartes, Paris, CoNRS member

Ms. Anne-Marie MOULY, Université Lyon 1, Lyon, INRA CSS member

Observer

AERES scientific advisor:

Mr. Jean GIRARD

Report

1 • Introduction

- Date and execution of the visit:

The visit took place on January 24th (from 9:00 to 19h30) and 25th (from 8:30 to 15h) 2011, in the meeting room of the Center (CSGA) located in Dijon. The evaluation process started with a 45' general presentation by M. Luc Penicaud followed by a 15' debate. Then, each of the leaders of the 9 teams and the platform presented their past and future research activities during 45' (30' presentation followed by 15' debate). Then, the AERES committee members had close door meetings every two presentations during 30' to discuss and evaluate each team.

- History and geographical localization of the research unit, and brief presentation of its field and scientific activities:

The CSGA project aims at developing a research center in Dijon (thereafter called TGU for "Très Grande Unité") that will provide a unique place dedicated to food sensory properties, sensory processes (from detection to representation), and eating behaviors. The gathering of the different groups allows the fusion of different regional expertise dedicated to a unique and specific area of research to generate number of added values. It is worth mentioning that the creation of the TGU corresponds to the fusion of several existing laboratories into a new and unique center.

Today, the Center is composed of 9 research teams and one platform made up with 148 members with a permanent position (among which are 32 CNRS and INRA researchers), 38 persons with a mixed research position (assistant/professors) hospital practitioners (CHU, AgroSup, University), 82 engineers and technicians (CNRS, AgroSup, University) and 27 PhD students. The creation of this Center was initiated by the Institut National des Sciences Biologique from the CNRS, the AlimH and CEPIA departments from INRA, the University of Burgundy (UB) and by the Etablissement National d'Enseignement Supérieur Agricole de Dijon (AgroSup Dijon). A first step was achieved in 2010 with the creation of the CSGA (UMR 6265CNRS, 1324 INRA, Ub, AgroSup) following a first evaluation by the AERES in 2009. Therefore, it should be kept in mind that the current CSGA is running only since January 1st 2010.

- Geographic localization:

The center (CSGA) is actually splited in three different sites (CESG, INRA/B1-B2 and GABRIEL building) but discussions are engaged to restrict it to only two sites (CESG, INRA) in a near future.

- The Management team:

The executive committee is composed by the director, five deputy directors (chosen by the director and approved by the board of directors) and the General Secretary. The executive committee assists the director in taking the decision.

The board of directors is composed by the group leaders and the persons in charge of the platforms. It assists the director in the definition of the scientific objectives as well as on the organization and life of the Center. The Institute council is composed by elected members (2/3) representing all the categories of employees from the center as well as members nominated (1/3) by the director of the Center. This council is in charge of any aspects related to the working conditions and plays the role of link between the director and all the members of the Centre.

Both administrative (budget for instance) and logistic services are placed on the behalf of a General Secretary (IE INRA). The General Secretary and the persons working with are in charge of the financial and administrative works of the CSGA. In particular they insure the relationships with the different organisms. The general secretary proposes to the Director and the Directory board all the administrative and financial procedures in accordance with the rules of each organism (CNRS, INRA and the University).

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	**33**	**30**
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	**28**	**32**
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	**33**	**1**
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	**79**	**69**
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	**20**	
N6: Number of Ph.D. students (Form 2.8 of the application file)	**38**	
N7: Number of staff members with a HDR or a similar grade	**34**	**32**

2 • Overall appreciation on the research unit

Food is important as it provides nourishment, contributes to (ill) health and can be a source of pleasure. Food and taste could be studied from many different perspectives, ranging from studying metabolism, digestion, the relation of dietary habits to health, eating behaviors, the marketing of food, the basic perception of flavor, et cetera. Evidently the study of food and taste may benefit from a wide range of scientific disciplines. The Centre des Sciences du Gout et de l'Alimentation (CSGA) provides a unique opportunity for the cross-fertilization of these disciplines. Such interdisciplinary science allows for exciting innovations, and larger and highly visible research projects. CSGA may thus have a considerable impact on a more integrated understanding of appetite and food perception. Therefore, it will likely influence food policy, and affect developments within the food industry. There is no other research center in Europe that is comparable to the CSGA. The challenge for the CSGA is to actively facilitate the aforementioned cross-fertilization. This is not an easy task. Scientists from different disciplines often speak different 'languages', and have their own specific topics of interest. That is why providing a mere opportunity for synergy is not enough. A proactive management facilitating cross-fertilization between teams is required for this task.

• Summary

The common aim for all the research teams of the center is to study food sciences with a broad range of approaches, ranging from physico-chemistry to neurosciences and human psychology. Before 2009, the previous labs located at the University, INRA and CNRS were built over the years on food sciences but were scattered throughout the campus. Along the past two years, additional topics have emerged by fusing some teams, and by recruiting new groups such as those interested for instance in vision and food, aging and food, food intake and energy budget, and the neurophysiology of olfaction. Several teams plan to introduce pathological conditions in their research plans, others have decided to focus on applied researches, and the rest will develop essentially a strong basic research.

One of the major characteristics of the TGU is its ability to go from human behaviors to molecular mechanisms encompassing all the level of analysis in food sciences. In this context, a strong feature of the CSGA is to offer a real transdisciplinary approach on food sciences that is unique both in France and Europe.

The second major characteristic of this center is the existence of a performing technical platform, well equipped and functioning with highly trained personal available for all groups in the centre.

The quality of the science in the CSGA, as compared to the rest of the world, is overall of good level, with some strong teams and young promising teams. Overall, the site visit committee considers that the CSGA is a solid and good grouping of preexisting laboratories and teams.

• Strengths and opportunities

- A very strong and constant support from the Burgundy Region, the University, INRA and CNRS (the center is a top scientific priority for all founders). This has secured the TGU during the starting period and should further help the TGU in developing risky projects.

- A very strong set of technical support. The Center is endowed with a very high ratio (technical staff/staff member > 1). Also, there is an extremely well equipped platform managed by very talented personals. This situation contributes to increase the visibility towards industrial partners.

- The head of the Center is a well-recognized scientist and as such he contributes to the dissemination and overall credibility of science outside of the Center.

- A good diversity and balance in team's leader profiles. The CSGA hosts teams whose leader range from the promising young investigator to the more senior researchers, and also includes leaders reaching the peak of their career.

- Excellent potential synergy between the themes developed by the different teams.

- Weaknesses and threats

- Lack of breathtaking, innovative, risky research projects.

- Poor capacity to attract international post-docs worldwide with excellent training (only 21 have been attracted since 2006).

- The degree of interactions between teams is not sufficient.

- Lack of a common vision for the Center. The research program of the TGU should include aims and goals that take into account specifically the synergies and the added values of gathering 9 teams together around a common platform.

- Recommendations

- The site visit committee appreciates the extensive work that has been achieved during the last two years, following the previous site visit of the AERES (January 2009).

- The site visit committee considers this Center as a major player both for the Burgundy region and at a National level. Therefore, it encourages all funders to maintain their financial supports, at least if the Center delivers all promising outcomes.

- The committee urges the Director, together with all team leaders, to reach higher international profiles by the levels of publications and by the ability to disseminate Science through conferences and congress organization and invitation.

- The most charismatic leaders should take position quickly in the Center and make consistent suggestions with the Director on how to make sure that historical and symbolic research themes within the Center do not get lost because of the lack of strong international leadership.

- The Director of the Center should apply a scientific strategy aiming at encouraging intramural innovative research projects. Changing some form of management is a prerequisite condition for the success of innovative strategies. For this, the Director should take the liberty to redistribute the funders' budget according to the priorities defined by the board of directors (an overall vision of the future of the field need to be defined). In this context, the Director should offer direct financial incentives (funding of projects) for teams that express active collaborations. Today, there is a mere redistribution of the budget according to the number of team's members.

- A policy aiming at attracting more international post-docs should be implemented.

- On a mid-term (2-4 years) vision, much attention should be paid for recruiting new teams in order to preserve a dynamic Center employing cutting-edge technologies.

- Production results

A1: Number of permanent researchers with teaching duties (recorded in N1) who are active in research	**58**
A2: Number of permanent researchers without teaching duties (recorded in N2) who are active in research	**30**
A3: Ratio of members who are active in research among staff members [(A1 + A2)/(N1 + N2)]	**0.94**
A4: Number of HDR granted during the past 4 years (Form 2.10 of the application file)	**8**
A5: Number of PhD granted during the past 4 years (Form 2.9 of the application file)	**53**

3 • Specific comments

- Appreciation on the results

- Though the relevance of the research is quite high in the field of food sciences, the research program lacks significant originality. As a result, both quality and impact of the results should be improved to increase the visibility of the research.

- Team leaders should prioritize the quality, but not the quantity, of the publications to reach higher impact journals. The number of scientific communications is too low although three teams do extremely well in term of scientific communications.

- The quality and the stability of partnerships are quite good for almost all teams.

- Appreciation on the impact, the attractiveness of the research unit and of the quality of its links with international, national and local partners

- The number and the reputation of the awards obtained by staff members, invitations to international conferences and symposia are by far too low when measured at the overall level of the TGU (but see the team-by-team analysis for exceptions).

- The inability to recruit high levels scientists and post-docs, and more particularly from abroad, is a concern that should be improved in near future. There is no doubt that a policy should be established to propose a very attractive package for the future newcomers (join venture between the University, the Burgundy region, INRA and the CNRS).

- In general, the teams are very good in raising funds from competitive funding agencies such as ANR, and in participating to scientific and industrial clusters.

- All teams maintain some very active network of inter-personal collaborations. A high number of teams participate to national and international scientific networks, and there are several stable collaborations with foreign partners, mostly in Europe but few in Japan and USA. It should however be reported that they are currently very few European Collaborative projects, and this should be worked out in the next quadrennial period of time.

- The concrete results of the research activity and socio-economic partnerships are very good.

- Appreciation on the management and life of the research unit

- The TGU comprises nine independent teams with identified team leaders, and a common technical platform under the supervision of the director and common administrative services supervised by a secretary general.

- The organization of the directorate is far from clear. It seems to the committee that decisional, executive and consultative aspects are not separated in independent entities. The decisional power should be attributed to the Board of Directors, where all the group leaders should be present. The Executive Committee should include the Director, the Secretary General and the board of directors and some deputy directors (both group leaders). The Center Council, where all the categories of personnel should be represented, should have a consultative power. Such organization should be proven functional in a very near future.

1) Meeting with permanent staff members

During the meeting with permanent staff members, no real problems appear. The works are performed in team, located mainly in one building and no problems were encountered. The communication with intranet site appears good. The interest of the platform is recognized. The main discussed point concerns the evolution that was asked by the director and the difficulties of researchers to compete for research director (DR) position because of the transition that was induced. The autonomous work is well appreciated. The starting scientific animation appears also to be good. The staff agrees that it is not obvious to attract cooperation from foreign countries.

2) Meeting with the technical staff

The technicians have had a preparatory meeting to the interview with the members of the committee. The group seems unified, with no apparent division due to their different employers. Globally, they feel quite happy and reassured with the evolution of the new TGU since the previous evaluation. They reported the following comments:

a) The administrative aspects, which they thought of as possibly problematic (due to specific habits and software for each organism: INRA, CNRS, UB), have now been fixed.

b) They reported difficulties concerning the setting of a computer network common to the three sites. In the present situation, they worry about the saving of their data, and they are greatly limited in the sharing of files and information, and in the knowledge of which professional formation they could benefit according to the employers. They also underline that this doesn't help them to feel as belonging to the same unit.

c) They worry about the increasing number of non-permanent positions (which could last 3-4 years) paid on grants such as ANR, with low hope of getting a permanent position.

d) They clearly say that they like being ascribed to identify teams (not necessarily one team) because it allows them to be involved in scientific projects.

e) They are involved and interested in the setting of technical platforms like the "Cellular culture" platform.

3) Meeting with the PhD students and post-docs

Some members of the review committee also met with a significant number of PhD students and postdoctoral fellows to obtain feedback and recommendations. In the discussion with approximately 30 PhD students and post-docs, some important issues were raised. First, students feel that more collaborations and interactions between groups would be more than welcome. They feel isolated in their own research group, especially when seeking for alternative scientific advice or expertise than what is available in their own group. They would be in favor of a mentoring system, the mentor(s) being from other groups. Second, the students expressed the difficulty of getting to know each other, especially when considering new students or post-docs. They have no joint social event for all students across the groups (e.g. drinks and pizza + short talks… or drinks and posters sort of thing – common in many other centers). This would make students feel that they can talk and exchange ideas. They also proposed to have on the intranet a "news" section highlighting the hiring of new laboratory members. Such coherence and continued interaction would probably pave the way for improved collaboration between the groups. Third, students feel they get to attend to scientific conferences fairly easily. As to their future perspectives, the students did not express any clear concern because those who complete their PhDs appear to get a job within a short period after they have reached their degree, either in industry or in research. After the post-doc phase, the question of the further career in research becomes more serious, as positions of senior researchers are difficult to get. Fourth, the attractiveness of the center turns out to be nationally good, as almost all students and post-docs are coming from different parts of France (only 1 from Dijon area), but is rather poor internationally (only a few foreigners). It should be noted that attracting foreign non-French speaking students and post-docs is unwise when they are expected to run experiments with French speaking subjects (e.g., sensory panel members or school children). Nonetheless, the everyday communication in the laboratories is in French which certainly does not signal of an international atmosphere. Flexibility in the communication language (use of English, at least along with French) is probably a question of attitude rather than that of language skills.

- The relevance of the initiatives aiming at the scientific animation and at the emergence of cutting edge projects

A committee in charge of the animation of the CSGA has been created even before the official creation of the CSGA and has initiated different types of actions to increase scientific exchanges between the teams:

1- Every two weeks, there is a seminar done by a research group or the ChemoSens platform where ongoing studies or projects before grant submission are exposed and discussed.

2- Once a month, a scientific guest is invited to give a conference. The international character of the invited speakers must be underlined (Canada, USA, Australia, Chili, Brazil, Netherlands, UK).

3- A PhD-Day twice a year.

4- Three scientific workshops in charge of emerging transversal research programs among teams have been created: « Sensory modulation dependent on the individual state », « Effect and evolutionary conservation of perireceptor events», and « Analytical/holistic analysis ». Each of them is managed by two researchers belonging to different teams. Scientific brainstorming has led to the initiation of 6 transversal projects that have been funded in 2010 by the Regional Council de Bourgogne. These projects cover different themes and disciplines of the CSGA.

Excepted for some projects and tools that are launched by the platform and other teams (see the detailed team-by-team analysis), it should be said here that new techniques and technologies are not often renewed in the center. The CSGA director is aware of the need to increase scientific interactivity between the multidisciplinary teams. His objective is to favor the emergence of new transversal projects that could be funded directly by the CSGA. The committee acutely encouraged him to establish promptly such action.

- The contribution of the research unit staff members to teaching and to the structuration of the research at the local level

The scientists of the TGU are deeply implicated in teaching at the University of Burgundy (UB). The center hosts 8 Professors (PU) and 25 assistant professor (MCU). Please note that in France, there is a very heavy teaching load for these PU and MCU (about 180 hrs per year).

In addition, most of the staff scientists from this TGU are also participating, of even coordinating, teaching courses for various aspects of Chemistry, Neuroscience and Human sciences at Master programs.

Regarding the organization of research at the local level, this TGU, and its leader, have been instrumental at the regional level to attract the interest of politics for specific funding of food sciences research. As a result, food sciences have been identified as one of the top priority for the University and the Burgundy region, and benefits from high level of funding.

- Appreciation on the scientific strategy and the project

There are strong scientific projects centered on food sciences in normal and pathological conditions. However, these projects need more articulation between all teams of the TGU. Increasing the biological knowledge on these mechanisms is extremely relevant for understanding food consumption. The feasibility of the scientific project is good thanks to the expertise and excellence of all teams, and to the very strong structural organization of the technical platform.

The resources collected from recurrent funding are used for the collectivity and the left over is also redistributed to the teams. 10% fees are charged on the external funding obtained by the different groups.

General comments on common services:

The CSGA has a total surface of 14 000 m2, is located in 3 distinct sites (CESG, INRA/B1-B2 and GABRIEL building) on the campus of the Burgundy University. It is financially dependent on three funders: CNRS, INRA and University of Burgundy. Therefore, the existence of efficient administration and common facilities is very important to facilitate the financial management of the TGU. The Common facilities are under the supervision of a General Secretary and involve 20 persons. They are in charge of: 1) the financial and administrative works of the CSGA and ensure in particular the relationships with the 3 organisms, 2) the maintenance of buildings and apparatus, and 3) the maintenance of computers, web sites and data analysis.

Specific comments:

1) The three organizations are involved in parallel in the financial management of the CSGA, each of them having specific rules and website. The committee urges the funders to coordinate their actions to generate a single "referent" organism. Within the first year following the creation of the CSGA, a specific "referent" person for each organism has been designed in order to facilitate the financial management of orders coming from the different teams. The committee encourages the organisms to install one unique Internet host accessible to the CSGA members wherever there are coming from. This is important not only for the core services' activities but also for all of the CSGA members to feel embedded in a single entity.

2) Discussions have been engaged to restrict the CSGA to only two sites (CESG and INRA) in the future. This will greatly facilitate the Common Services' work. However, the committee is wondering when this operation will really occur and asks the involved organisms to set up a clear timetable endorsed by all funders.

Animal Facility :

The animal facility is divided into two separate units.

The first unit (INRA) hosts most animals. It currently feeds 1500 mice and 600 rats. The facility is pathogen free. Most activities are performed by the facility personnel, including tail biopsies for genotyping.

The second unit currently hosts 300 mice and 70 rats. This is where experiments are performed. The facility is not SPF; however, it is devoid of common infectious agents, including MHV. The unit comprises 22 rooms, with many specialized rooms (behavior, surgery,…). This provides the users with excellent work conditions. In view of the available square footage and the very limited number of currently housed animals, significant expansion would be easy.

Overall, there are few original and cutting-edge research projects. However, when existing, they have been commented in the section "team-by-team" below.

4 • Appreciation team by team

Team 1: MOLECULAR INTERACTIONS, IN-MOUTH BREACKDOWN AND FLAVOUR PERCEPTION

- Name of the team leader**:** E. Guichard and C. Salles

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	5	1
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	6	6
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	10	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	8	4
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	1	
N6: Number of Ph.D. students (Form 2.8 of the application file)	9	
N7: Number of staff members with a HDR or a similar grade	9	6

- Appreciation on the results

The team activity is dedicated to “in mouth” phenomena leading to food perception. The main issues addressed by the team members are:

Identification of the molecular compounds (flavors, aromas) at the origin of the sensory profile of food products;

Interactions of aromas/flavors with food matrices, especially with proteins and polysaccharides;

Diffusion phenomena of the flavors in food matrices;

Flavors release during the chewing process;

Impact of saliva on flavor perception.

Overall, it can be said that the team is doing well and that the addressed questions are pertinent and in line with socio-economic expectations. The team is actively participating to the development of this emerging field. The tools used are up to date and original. The Chewing simulator represents a particular highly interesting project. The scientific output is at a good level in both French and European contexts.

The publication level is satisfactory with about 96 papers published in peer reviewed international journals over the 5 last years. The journals often have the highest impact factors in their respective fields (Chem Senses, J. Agric. Food Chem, J. Food Sci.). All the researchers do publish and PhD students are often present in the authors’ list. The scientific production is regular over time and numerous papers involve more than one team member. However, the number of patents seems quite small considering the engagement in industrial partnerships.

The number of contributions in conferences and of invited lectures is satisfactory. Nevertheless, it can be underlined that they are assumed by a limited number of team members and that they have been decreasing over the two last years.

Long-term collaborations with French teams have been successfully established.

The team is currently participating in two ANR projects and has been involved in one European network. The work is also of high value in its approach and application. This is demonstrated through the engagement in collaborative research projects with a number of private companies. However, the involvement in international projects and collaborations is insufficient considering the scientific level of the team.

- Appreciation on the scientific strategy and the project

The context analysis and the research stakes identified for the next 5 years are relevant. The project is based on three main topics: experimental data acquisition, understanding and modeling aroma retention in food matrices, building the sensory image of food products. Several scientific questions have been identified for each topic. The large number of addressed questions is a real concern considering the recent significant cut in manpower (9 members have left the team).

Given the very wide spectrum of skills, one of the main challenges is to demonstrate that the team members are able to cooperate. The way the tandem of team leaders will impulse the dynamics and will contribute to reach the objectives is unclear.

Many of the projects are original. There is an appropriate balance between feasibility (as indicated by preliminary data) and risk. The topic about saliva interactions is interesting although being partially risky. In vitro experimental approaches are original and sound. In silico studies are worth continuing but they remain still risky (even if convincing results have already been established). The strategy and the expected outcomes concerning the modeling activity have not been clearly defined. The interaction between molecules and saliva are of special relevance.

- Conclusions:

  - Strengths and opportunities

- The multidisciplinary approach;

- The complementary outcomes from in vivo and in vitro studies;

- The mouth simulator is unique and of special relevance;

- The partnership with industry.

  - Weaknesses and threats

- The research project requires a wide field of expertise/skills and a multi-scale approach (from molecular to macroscopic scale). While the molecular scale is well dimensioned with a lot of analytical facilities and competences, it seems that the mesoscopic one is not at the same level of achievement.

- The management of the team is neither clear nor optimized because the team leader is part-time.

- Interactions with other teams in the institute are insufficient.

- The post-doc attractiveness is poor.

  - Recommendations

- Consolidate the fundamental research activity and, if possible, focus it on a limited number of topics;

- Pursue interactions with industry;

- Continue involvement in national programs;

- Improve the international visibility (through recruitment of international Postdocs, visiting professors, participation to European projects,…);

- Keep on publishing work in better journals;

- Stabilize the staff;

- Consolidate the expertise in physical-chemistry;

- Reinforce the leadership of the team.

Team 2: FLAVOUR PERCEPTION, PERIRECEPTOR EVENTS AND PERCEPTUAL INTERACTIONS

- Name of the team leader: L. Briand and A.M. Le Bon

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	5	5
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	3	3
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	5	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	8	6
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	2	
N6: Number of Ph.D. students (Form 2.8 of the application file)	4	
N7: Number of staff members with a HDR or a similar grade	4	4

- Appreciation on the results

The two main objectives of the group are:

- To investigate flavor perception induced by mixtures of food compounds (odorants, tastants, trigeminal stimuli) in relation with sensory receptor activation and perceptual interactions (synergistic or antagonists effects). The committee recognizes that the characterization of olfactory spaces in the Chardonnay wines, is of high interest.

- To study the impact of perireceptor events (xenobiotic metabolizing enzymes and odorant-binding proteins) on olfactory and taste perception.

The knowledge about the mechanisms underlying the food flavor is at a very pioneering stage and this team is actually contributing to the development of this emerging and intrinsically complex field. The group is gathering many competences to address such a complexity (chemical analysis, biochemistry, biology, psychophysics, etc.). Up to now, the main focus has been given to the preliminary stages of the olfaction process. In the project, the group will extend the study to other senses (taste, trigeminal perception) and to more complex and realistic scenarios in order to provide a more complete mapping of the food flavor construction.

The publication level is satisfactory with 47 papers published in peer reviewed international journals over the 5 last years (the main publications appear in J Mol. Biol., J Biol. Chem. and Chem Senses). Overall, the scientific production is more than honorable when considering that the group was created in 2007.

Only 25% of the publications are co-signed by PhD or postdoctoral students. This result is somehow disappointing considering that 13 students have been recruited during that period. Their involvement and scientific contribution must be improved. It is also important to underline that 50% of the papers only involve one team member and that 3 permanent researchers have cosigned less than four publications. This observation raises some concerns about the sense of belonging to the team and about the team leadership.

Most of the research activities are carried out in cooperation with other national or international groups with a recognized reputation. Interestingly, the team has been involved in four ANR projects, some of them being coordinated by scientists belonging to the group.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

The post-doc attractiveness is good with 4 students recruited over the 5 last years. However, it is surprising that the team was not able to raise funds from international calls.

- Appreciation on the scientific strategy and the project

The proposed research has two main themes. The novelty comes from the integration of 3 fundamental issues in the scientific approach:

The possible synergisms/antagonisms in mixtures of odorant or taste compounds (perceptual interactions);

The impact of perireceptor events;

The role of learning and memory.

A substantial number of technicians and engineers are “historically” involved in the team. It seems that there is no real policy for the (re)allocation of resources at the scale of the institute.

Many projects are original. There is an appropriate balance between feasibility (as indicated by preliminary data) and risk. However, there is also some divergence in the number of subthemes addressed, which is detrimental to the team visibility.

- Conclusions:

  - Summary

This is a young group that has already proved its ability to deliver but which has still to improve its internal cohesion and coherence. Overall, the group seems to have over-passed the emerging stage and has now reached a sufficient level of maturity to address ambitious scientific questions. The multidisciplinary nature of the research enhanced by the gathering of team members with different skills bodes well for the future. However, it is strongly recommended to the team to clarify its leadership and to prioritize a limited number of topics with high potential for scientific impact.

  - Strengths and opportunities

- The multidisciplinary approach;

- The complementary outcomes from the different themes;

- The partnership with other groups.

This is a group of motivated scientists working at the interface between analytical-chemistry, biology and psychophysics. It has a good coverage of scientific skills and well set complementary collaborations. It is evident that they have identified many areas where their approach may become fruitful. Potentially, the work may pave the way to the elaboration of novel nutritional strategies to address a major challenge: That of reducing the caloric intake without altering the sensory perception. Collaborations with other groups within the institute are a major strength of the proposed research program.

  - Weaknesses and threats

The team currently mentions two group leaders. The leadership should be clarified and preferentially assumed by one researcher only, whose publication records, international recognition and/or overall involvement are above the average.

The number of topics is too large considering the current visibility of the team. Priority has to be given to cutting edge projects.

The international visibility of the team needs to be improved. The team is encouraged to publish its work in journals with higher impact factor and to get involved in international research networks.

  - Recommendations

- Consolidate the sense of belonging to the team;

- Clarify the leadership;

- Focus the research activity on the topics likely to improve the team visibility;

- Continue involvement in national programs;

- Strengthen links to other groups within the institute;

- Get involved in international networks;

- Keep publishing results in good, or even better, journals.

Team 3: MECHANISMS AND PLASTICITY OF CHEMOSENSOTY PERCEPTION

- Name of the team leader: J.F. Ferveur

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	6	6
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	5	5
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	2	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	8	8
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	0	
N6: Number of Ph.D. students (Form 2.8 of the application file)	3	
N7: Number of staff members with a HDR or a similar grade	3	3

- Appreciation on the results

The team is an established group, renown for its contributions in the field of pheromone perception in Drosophila melanogaster, and in particular in the chemosignals that trigger courtship. Among other findings published these last 5 years, the group showed the effect of prospero on sexual behavior in males, a link between taste sensory neurons and pheromone perception, and the role played by the desat gene on both pheromone perception and emission. This was published in PNAS. The quality and number of publications is fine (40 publications in total with the highest impact journals being J. Neurosci., Dev. Biol., Nat. Neurosci.). The group is very active in terms of poster and oral presentations. The number of PhD theses is also significant (10).

The origin of the contracts/grants/partners are very diverse (the Burgundy region, ANR, CNRS-JST,…), and of quality.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

The group is visible at the international level, and has therefore a significant impact. The number of invited participations to international conferences is relatively limited (10) for a 5 years period. This may however not reflect the number of invitations to such venues. On the other side, it has to be said that the PI has been directly involved in the organization of international symposia. No awards are mentioned in the report.

Two post-docs are from Japan illustrating the strong attractiveness of the team.

18 contracts, amounting to a total of 1.090.000 euros, have been obtained by the group. This is a good figure.

Two collaborative grants have been obtained with a scientist based at Tohoku University (Japan). This is in addition to two more collaborative grants (with M. Cobbs, UK and R. Godoy-Herrera, Chile).

- Appreciation on the scientific strategy and the project

The proposed project aims at dissecting the mechanisms that mediate behaviors (i.e. mating, feeding, references, etc) triggered by sex pheromones and food. This project is divided in well described themes (perception, adaptation, transduction to fatty acids, adaptive responses to bitter molecules, interactions between food and pheromones, modulation of feeding, and salt transduction). These apparently (and for some truly) disparate aims, build on the strengths of the group. This long-term scientific project is sound and feasible.

The PI has a good sense of management on how to allocate the resources (both financial and human resources).

A few of the proposed projects are cutting edge. To mention a single one, the group plans, using transgenic mice in which taste buds expressing a fatty acid transporter will be genetically labeled, to investigate the signaling pathways activated by fatty acid stimuli.

- Conclusions:

  - Summary

The group is recognized at the international level for its contributions to the chemosensory field. Its production is of good quality.

  - Strengths and opportunities

One of the major strengths of the group is its ability to integrate, in Drosophila, genetic, electrophysiological, and behavioral approaches.

  - Weaknesses and threats

The field has relatively recently produced a number of prominent laboratories with a strong interest in Drosophila chemosensation. These may represent opportunities to collaborate, or to face dangerous competition, depending on the way one looks at it.

Also, one could expect publications in higher impact journals from this strong team.

  - Recommendations

The group is a stable and productive unit. It fulfills all requirements to be renewed as such.

Team 4: FUNCTIONAL PLASTICITY OF OLFACTORY SENSORY NEURONS

- Name of the team leader: X. Grosmaître
- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	0	0
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	1	1
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	1	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	0	0
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	0	
N6: Number of Ph.D. students (Form 2.8 of the application file)	1	
N7: Number of staff members with a HDR or a similar grade	0	0

- Appreciation on the results

The team is a young ATIPE (CNRS) including one permanent CNRS researcher (team leader) recruited in 2008, one non-permanent researcher and one PhD student.

Since the team is very young and small, the committee decided to only evaluate the research project part (otherwise the comparison with other groups would have been unfair). The team has also not been ranked in respect to the other groups as well for the same reason.

The broad topic of the team is to investigate the activity of olfactory sensory neurons (OSNs) expressing the same receptor, using patch-clamp recordings of GFP-labeled OSNs in the intact epithelium of gene-targeted mice.

The scientific questions are original and important in the field. The team is one of the very few in the world to perform OSNs patch clamp recordings on the intact nasal epithelium preparation from gene-targeted mice.

The publications are mostly from past postdoctoral work and not from work conducted in Dijon. However, the publications record of the team is good: 10 publications including 3 in high to very high impact factor journals (J Neuroscience, PNAS, Nature Neuroscience). This is encouraging in regards to the ability of the team to publish future work in the best journals.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

The team leader is the recipient of an ATIP CNRS 2008-2011, attributed by the CNRS to young promising scientists, in the aim of favoring their career and enabling them to constitute a team. The team has attracted a PhD student and a non-permanent researcher. The team has obtained a two years funding from the Burgundy Region.

The team has a good network of international collaborations. The team has initiated collaborations with different partners: Peter Mombaerts at the Max Plank Institut fur Biophysik in Frankfurt (Germany), Minghong Ma in Philadelphia (USA), Hiro Matsunami at Duke University (USA) and Minmin Luo in Beijing (China).

- Appreciation on the scientific strategy and the project

The project of the team aims at pursuing the study of OSNs activity, using the same technique they have developed, focusing on the investigation of the plasticity of odorant coding by OSNs under the influence of environment (for example, after prolonged odor exposure). The project is quite feasible because it relies both on the existing skills of the team for the electrophysiological part, and on internal collaborations with Teams 7 and 5 for the behavioural and molecular aspects.

Two running grants enable to set up the planned experiments.

The question of OSNs sensitivity and selectivity as a function of environment is innovative and important. The technique is also innovative and challenging: very few labs perform OSNs patch-clamp recordings on the intact nasal epithelium preparation from gene-targeted mice. There is a good balance between originality and risk taking.

- Conclusions:
  - Summary

This is a small young team, which has a good publication level and works on original scientific questions, addressed via cutting-edge technologies developed abroad. Because the team is new, the committee decided to focus its evaluation on the research project.

  - Strengths and opportunities

The questions are innovative, the technology is cutting-edge. The team has a good network of collaborations.

  - Weaknesses and threats

The size of the team is very small, with no technical support. There are only few electrophysiologists in the CSGA, so the team may feel isolated.

  - Recommendations

In the near future, the team should be reinforced by post-doctorants and one technician. The team should increase its participation in ANR projects and should publish as soon as possible the research work conducted in Dijon.

Team 5: Brain, sensiorality, and metabolism

- Name of the team leader: L. Penicaud

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	5	5
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	3	5
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	0	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	3	3
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	1	
N6: Number of Ph.D. students (Form 2.8 of the application file)	5	
N7: Number of staff members with a HDR or a similar grade	5	5

- Appreciation on the results

The track record is solid. The team made a number of discoveries on brain glucose-sensing, a lot of them published in the leading peer-reviewed journal in the field, "Diabetes". This original research had a substantial impact on the field and is well regarded. The team also collaborated successfully with several leading laboratories in the US in some of these studies.

Very good relevance and originality of the achievements. Indeed, the team was the first to demonstrate that both glucose and lipid sensing by the brain were in part mediated by changes in ROS production in specific brain nuclei. This signaling pathway is also involved in insulin effect and is altered in pathological situations such as obesity and type-2 diabetes. They further showed that such a mechanism is present in pancreatic beta cells, thus extending the role of ROS in glucose-sensing mechanism. They have already identified 4 distinct subpopulations of neurons mediating glucose sensing, and identified the NPY neurons as those activated by high glucose concentration whereas POMC neurons remained insensitive. They also initiated another original project and obtained strong evidence showing that mitochondrial dynamics (fusion versus fission) may play an important role in glucose-induced ROS production. The team has published 91 publications, about half of them resulting from national and international collaborations which led to publications, in particular in J Clin Invest, Cell Metab and Cir Res. Considering that about half of the researchers have teaching duties, the number of publications is very good. The quality is also very good with regular publications of their original work in Diabetes (11 in 5 years, 3 in 2009). 46 scientific communications in national (16) and international (30) meetings, 5 PhD defenses and deposit of 2 patents (2005).

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

Members of this teach were invited to many international symposia, indicating the high international standard of their research. The team recently attracted one of the most promising young postdoctoral scientists in the field of glucose sensing, to join the team from the USA.

Excellent international visibility of the leader with 16 invited conferences to international (6) and national (10) meetings.

Since their integration into CSGA in late 2008, the team successfully integrated 2 researchers and 1 Engineer working on integrative neurobiology of food intake. This definitively opens new research axes and reinforces their interactivity with others CSGA teams (teams 3, 4 and 8, ChemoSens Platform). Moreover, the team has recruited 2 full time research scientists (1 CR2 CNRS 2006, 1 CR2 INRA 2009), 1 IE (CNRS 2010), and 2 post-doctoral scientists. Altogether, this reflects a very good dynamics of the team.

Excellent ability to obtain grants from either the government (6 including 3 ANR), associations (6), region (2) or industries (3) for a total of 1,464 Keuros. Participation to 1 EU grant. High participation to national networks through ANR grants. Participation to several national (18) and international (6 with USA, Switzerland, Canada or Spain) collaborations resulting in many publications in journals with very good impact factors.

- Appreciation on the scientific strategy and the project

Theme 1. This is an excellent research plan that is likely to provide many novel data and is very timely. It builds solidly on the laboratory's previous work in the field of glucose-sensing. The experiments looking at ROS and mitochondria are particularly interesting and original. Overall, this is an outstanding research plan.

Themes 2 and 3 presumably result from recent integration of new researchers into the group:

Theme 2. A good plan, but a little weaker than theme 1. It seems that there is less preliminary data here, and the plan is less clear-cut than theme 1. This is a high-risk plan, but this is appropriate in this overall plan of investigation, because it also includes many "safe" components. Moreover, a researcher of the team is presently doing a scientific training in Spain to acquire a strong expertise in the morphological analysis of neuronal circuits.

Theme 3. Addresses a very interesting question on the role of diet-induced hypothalamus plasticity in eating behavior and energy homeostasis. The team has obtained strong preliminary data suggesting that high-fat diet induces a specific molecular signature of synaptogenesis in discrete areas of the brain as well as modulation of POMC and NPY neuron activities that anticipates food behavior adaptation. This research field is largely unexplored and there is no doubt that this research axe will give new important insights into modulation of brain nutrient sensing by nutritional status.

- Conclusions:
  - Summary

International visibility of the team leader, cutting-edge proposal, containing by low-risk (theme 1), and higher-risk (themes 2 and 3) experimental strategies.

  - Strengths and opportunities

Diversity of lines of research, novel and original general hypotheses, good track record, good team composition, good mixture of straightforward and more difficult experiments.

  - Weaknesses and threats

Theme 2 is somewhat unclear. More specific/detailed hypotheses, and preliminary results would bring further information on the feasibility.

  - Recommendations

During the next 4 years, to proceed as planned with themes 1 and 3. For theme 2, initially focus on experiments designed to test its scientific relevance and thus to formulate a more consolidated and concrete hypotheses (if this is not done early on for theme 2, there could be a danger to waste resources). But, overall, the proposal is excellent and the risk of theme 2 is appropriate considering the strengths of themes 1 and 3.

Team 6: Eye, nutrition and cell signaling

- Name of the team leader: L. Bretillon and C. Creusot-Garcher
- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	2	2
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	2	3
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	1	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	6	6
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	0	
N6: Number of Ph.D. students (Form 2.8 of the application file)	4	
N7: Number of staff members with a HDR or a similar grade	3	3

- Appreciation on the results

Research group focuses on lipid mediators in the eye and more particularly in the retina. The work is subdivided in several projects including nutritional studies in pigs and human, gene polymorphism association studies and lipid mediator studies in vitro and in vivo in relevant models.

The group's excellent scientific production is published, in the leading ophthalmology journals Investigative Ophthalmology and Visual Science and Vision Res etc., but also in journals such as Lipids and Chromatographia. They regularly present their work at the most important national and international conferences in ophthalmology. Several senior and less senior researchers are given the opportunity to be last author in the different projects. Two thesis students have recently obtained their degrees in the group.

The members of the group seem to work well together on the various subjects. This is reflected in publications where all the group members appear as authors and as mentioned different researchers and clinicians appear as last authors on the team's publications.

The majority of projects are carried out in national (St Etienne University Hospital) and international collaborations (Biochemie Zentrum Heidelberg ; University of Southern California ; Karolinska Institutet). Apart from the academic collaborations the group also collaborates with several different pharmacological companies (Allergan ; Horus Pharma ; Fournier).

The committee has particularly appreciated the investigation published twice in 2008 and 2009 in the journal Invest. Ophthalmo. Vis. Res. on the effects of cholesterol esters deposits in the retina.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

The staff researchers are regularly invited to conferences and symposia on a national and international level.

The group has recruited an additional staff tenured track researcher in 2010 who might reinforce the group. There are currently 3 PhD students working in the laboratory.

Funding was secured from a number of different sources, such as pharmacological companies (Allergan; Horus Pharma and Fournier) and from ANR and the Conseil Régional de Bourgogne additionally to the INRA funding.

There are several ongoing collaborations mentioned with groups in Los Angeles; Heidelberg and in St Etienne.

The group publishes regularly broad public articles to inform about the current understanding on how nutrition affects eye diseases in particular age related macular disease.

- Appreciation on the scientific strategy and the project

The axis entitled « influence of dietary factors to the functioning and aging of the retina » aims to test the influence of dietary fats (in particular LC-PUFA) in a relevant animal model of the early stages of age related macular degeneration (ApoB100LDLR-/-mouse); increase the bioavailability of beneficial lipids (INRA Qualiment program) and evaluate environmental factors in a very large cohort of 3500 patients that are in their 10th year of follow-up.

The axis entitled « Lipids: cell mediators in the functioning and aging of the retina » proposes to analyze three distinct lipid mediators (24s-hydroxycholesterol, plasmalogens and gangliosides) in relevant animal models.

Team 6 is a relatively small structure; there is no mention of a policy for the allocation of resource.

The presented project is in continuity of the research performed in the group. The research is highly original in a much neglected field of lipid mediators in eye disease. All projects are interesting and promising and supported by exciting preliminary data.

- Conclusions:
  - Summary

Team 6's research focuses on nutritional lipids and lipid mediators in the eye. The research reaches from clinical studies, such as polymorphism studies to animal models. The group has a very good publication record, publishing in the highest ranked ophthalmological journals as well as general journals in the field of lipid research. The group has various national and international collaborators and works in collaboration with the Chemosense platform. The researchers regularly present their work at the most important national and international conferences in ophthalmology and are invited as guest speakers to international conferences and seminars.

Team 6 insured outside funding from a number of industrial and academic sources. A newly recruited tenure track researcher joins the group this year, which will further strengthen their scientific production.

  - Strengths and opportunities

The group's interests cover a neglected field of lipid biology in retinal homeostasis and diseases where disturbed lipid metabolism plays a critical role. The researcher's expertise and the institute's technical platforms give them a unique opportunity to analyze lipid composition and its role in ophthalmology. The team uses up to date techniques, publishes very regularly and has an ambitious and exciting research program for the coming years.

  - Weaknesses and threats

Team 6 has a well functioning collaboration with the ChemoSense platform. To further integrate Team 6 with the other research groups of the centre the team (and centre) would benefit from additional collaborations with one of the other research groups.

  - Recommendations

This is a well functioning research group that should be encouraged to continue their work as it is. Nevertheless, it should be mentioned that the researchers should attempt to publish their data in more general and higher impact journals.

Team 7: Developmental Ethology and Cognitive Psychology (DECOP)

- Name of the team leader: B. Schaal

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	6	7
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	2	2
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	5	1
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	3	2.5
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	0	
N6: Number of Ph.D. students (Form 2.8 of the application file)	5	
N7: Number of staff members with a HDR or a similar grade	4	5

- Appreciation on the results

The team focuses on olfactory functioning, using three approaches: a) the characterization of Mammary-Pheromone-induced odour learning in rabbit neonates, b) the mechansims underlying orientation response and odour learning of mouse/human neonates respectively to murine milk and to areolar odour from lactating breasts in humans as well as experience-driven shaping of food neophobia; c) the study of olfaction/visual cross-modal high level cognitive processing. The approach is multidisciplinar, ranging from neuropsychology to nutrition, imaging, or chemo-ecology. This multidiscplinarity is quite relevant. The thematic of the research is quite original, especially the one aimed at understanding the attraction to mammary odour in mouse and human neonates.

The team has a good publication record. The main characteristics are the discipline diversity, as publications range from multidisciplinary journals (one paper in a high impact journal such as Current Biology, two in PlosOne and two in Chem. Senses) to high level publications in the field of Neuroimaging (one in Neuroimage, one in Human Brain Mapping), Pyschology, Ecology, Ethology, Behavioural Neuroscience (one in Learning and Memory), Nutrition. The team is very dynamic in PhD output as 11 thesis have been defended during the period of interest.

The team has also much international collaboration, both in Europe (Germany, Switzerland, UK, Belgium, Italy) and with the USA.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

Members of the team were honoured by different awards as one member of the team is currently an IUF member (IUF Junior), another one obtained the "Médaille de Bronze" from CNRS and another one obtained the "Grand Prix Abbott". Members of the team are participating in Editorial Board of several Journals (Chemoecology, Chemosensory Perception), organized 6 symposia at International Meetings, and were members of scientific comittee of several International meetings. Members of the team have also been frequently invited to give talk at international meetings (21 invitations, 7 of them being plenary lectures) or at Universities from abroad (9).

The team was able to attract one post-doc from Germany, 4 associate researchers from USA and one visitor from The Netherlands. This is a good record.

The team was successful in raising funds. For exemple, they have been leader in one ANR project, are participants in 4 ANR projects and in one European Network. In addition, one member of the team recently got a young researcher ANR grant. Additional funds are more local. The total corresponds to 1 789 726 euros, which is quite impressive. Further, these funds are very diverse.

The team is involved in national networks in Ethology, Ecology, Psychological and Psychobiological development. The team is also member of a LEA (European associated laboratory) with Germany (The Dijon-Dresden European Laboratory for Taste and Smell) (The Team leader is currently co-leading this international lab). Other collaborative networks are related to ANR and to a European Network.

The team has a high number of publications, and received funds from socio-economic partners. For example, two PhD students were supported by funding from Nestlé. Moreover the team is depository of a patent (CNRS-INRA) for rabbit food.

- Appreciation on the scientific strategy and the project

A scientific project has been written which is quite feasible in term of available methodology, available funds, time constraints and persons. It is really focused on available models in which the lab has gained much experience.

Some parts of the project are already funded, which may make the allocation of ressources quite easy. The strategy concerning human ressources is very convincing, as the recruitment of a neurobiologist is planed to introduce more mechanistic research projects in the team.

The research project is relevant and original. It combines, in three experimental models, the comprehension of olfactory function per se during developmental transitions, with the study of its interaction with the other senses in line with the emergence of multimodal representations and other cognitive functions. The project using eye tracking in babies to study associative learning is clearly cutting edge.

- Conclusions:
    - Summary

The group is internationally recognized for its work on both human and rabbit, as can be seen from the numerous international invitations. The scientific production is good, including multidisciplinar publications (one paper in Current Biology), the project is rich and includes cutting edge research, it is focused on one theme with a very relevant strategy, and it is feasible as preliminary results have been obtained.

    - Strengths and opportunities

The research is quite original and multidisciplinary. One of the major strengths of the project lays in the continuation and accentuation of the comparative multidisciplinary approach, with iterative interactions between Human and Animal models. The recent development of the mouse model will provide additional new tools for further exploring perceptual and cognitive processes in line with development.

The team is stable and has greatly comforted the neurobiological approach thanks to internal as well as external collaborations.

    - Weaknesses and threats

The team is missing a permanent researcher in Neurobiology, but the strategy for recruiting such a specialist is clear.

    - Recommendations

Until now, the neurobiological approach has been made in collaboration. The recruitment of a neurobiologist in the team may help to further consolidate this approach.

The technical staff should be reinforced.

Team 8: DEVELOPMENT AND DYNAMIC OF FOOD PREFERENCES AND BEHAVIOUR

- Name of the team leader: S. ISSANCHOU

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	0	0
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	5	6
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	5	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	4	4
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	6	
N6: Number of Ph.D. students (Form 2.8 of the application file)	4	
N7: Number of staff members with a HDR or a similar grade	3	3

- Appreciation on the results

The team is involved in several interesting and highly original lines of research that will have a definite impact on further research and theory. Research on early development of sensory and liking responses to foods is a top project (published for instance in Dev. Psychobiol. in 2009). Focus on food constituents that are either beneficial for health (vegetables) or adversely affect health (salt, sugar, fat) helps to understand the control of food intake and food choice and thus it has and will have large societal significance.

Food choice research that combines economical and sensory/hedonic aspects is globally rare and has clear societal relevance. The research on memory for food is unique and highly original, and it has potential to pave the way to improving our understanding of food choice. The published sensory research touches complex and challenging topics.

The quality of the published papers is good (with the highest journals being Dev. Psychobiol., Appetite and Food Qual Prefer). The number of published international peer reviewed papers is acceptable, but could be higher. Fortunately, there is an upward trend in the number of publications within the evaluation period. Team members are regular contributors at conferences in France and abroad. The team demonstrates a clear effort to communicate their research to the public.

The theses are not separately listed, but at least 5 have been completed within the evaluation period, and 5 are underway. This shows that thesis supervision is a steady part of the research activities.

The number of conference proceedings, presentations, and items such as book chapters show the integration into the scientific community. The group has long-term collaboration with scientists from other disciplines (e.g., economics) and from other countries (e.g., Denmark, the Netherlands). The partnerships in the EU funded projects shows good integration with the scientific community. Based on group structure, the group is less international than one would expect.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

Different team members have been invited to give presentations at various conferences, national and international, reflecting the established position and reputation of the team. Invited presentations are accumulated around the research on children´s food perceptions and early experiences. Although most presentations have been held in France, there are each year also international presentations.

The team hosts some foreign students and visitors, implying its openness to internationalization.

The list of contracts shows a diverse set of sources. Several competitive grants have been obtained from national sources, and two from European sources. The team has recently been successful at obtaining grants, notably the HabEat, an FP7 project. This shows the strength of the group leader, in gathering important research groups in Europe around a research topic, and indicates competitiveness. The group leader is active and successful in raising funds.

The team collaborates with various researchers within CSGA. International collaboration is evident from the list of publications: both specific partners and partners through European funding. National collaboration cannot easily be read from the lists of publications or contracts.

The main contribution of this team lies in pushing theory and research further with regard to eating behavior. This, by definition, is important knowledge for the food industry, but how that knowledge is then applied concerns industry, not science.

- Appreciation on the scientific strategy and the project

Research on children´s responses to foods is an important part of the strategy, and it has strong impact. The OPALINE project provides a unique and detailed look at the earliest development of taste and food preferences. This is a relevant project and has prepared the group for the continued original research into children's food habits.

The group has obtained funding to capitalize from their earlier experience of research on the elderly. They will work on improving the appetite of the elderly through to familiar foods, a welcome project because the malnutrition and the loss of appetite in the elderly is far from being resolved. This work will have strong societal impact.

Extension of the research into the animal models turns out to be a compromise and may be distractive within the team. Perhaps support can be obtained from other teams within CSGA.

Most of the research has a clear focus. The 'early development' theme is important for understanding the emergence of food preferences. It will inform parents and policy makers on how to promote healthy dietary habits. The 'food memory' theme too is original. The idea/finding that different sensory features are remembered differently and thus contribute differently to expected taste and liking is intriguing.

The HabEat project, focusing on children´s food habits, is a cutting edge project.

- Conclusions:
  - Summary

This is a fairly large group comprising several (non-)permanent researchers and a few PhD-students. The research focus is clear; the research themes are innovative, and highly relevant for both theory and applications. The permanent team members and the group leader are internationally respected scientists. Several team members are regular contributors to international conferences. The team has proven to be successful at obtaining external research funds for relevant feasible research projects. Much of this funding does not just come from governmental institutions but often also comprises private funding. Overall, the quality of this team is very good. The clear research plans, funding, networks, and the many PhD students present guarantee this quality for the future.

  - Strengths and opportunities

The main strength of the team lies in its interdisciplinary make-up and openness to collaboration nationally and internationally, which seems to work out well and has led to interesting new research avenues. They should strive to maintain the interdisciplinary focus.

  - Weaknesses and threats

Concerning the number of permanent team members, post-docs and students, the scientific output particularly in terms of peer reviewed international papers could be higher. Also, the type of research conducted could potentially be published in top-level nutrition journals. Heightened ambition in this respect is recommended.

Although collaborations with other researchers from other units or universities in France or abroad are important, they also pose a potential threat. Collaborating requires organization and that costs time. That time may interfere with the time one has to focus on one's own research. Importantly, one has to be wary that one is not doing work for (rather than with) another scientist.

  - Recommendations

1. Keep a clear research focus and prioritize the topics;
2. Maintain and strengthen the interdisciplinary character of the research program;
3. Increase scientific publications in top-level journals to even greater impact of the field.

Team 9: Culture, expertise and perception

- Name of the team leader: D. Valentin

- Staff members

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	4	3
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	1	1
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	3	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	0	0.5
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	4	
N6: Number of Ph.D. students (Form 2.8 of the application file)	3	
N7: Number of staff members with a HDR or a similar grade	2	2

- Appreciation on the results

This is a small research group active in a specific area of description and categorization of chemosensory perceptions, a lot of focus on perceptions of wine. Furthermore, cross-cultural work is conducted with the intention to understand the stability and flexibility of perceptions and preferences across cultures. Among all projects, the one related to cultural differences in food description and preference published in Foof. Qual. Prefer. is the most promising.

Given the size of the group, the output in terms of refereed publications and invited presentations is good. The number of completed PhD theses is also good.

The collaboration consists of a few French colleagues, in addition two from the USA and colleagues from Far East with whom the cross-cultural data have been collected. One of the PhD students who has completed their work and two under way are also from Far East.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

The invited presentations during the evaluation period are mainly in France and almost exclusively European.

The group has obtained 2 major projects from Regional Council in 2009. Before that, the funds listed are small.

Larger networks to which the group would be close are not visible. Foreign partners are listed above.

- Appreciation on the scientific strategy and the project

The future plans listed in the strategy reveal interesting experimental plans. Yet it would be desirable to see a larger frame, more general theses and plans on further development. The impression is that the group conducts unique and intriguing original research. On the other hand, it makes an impression of being isolated. The future plans do not suggest a change in the situation.

Although the project titles did not suggest cutting edge projects the discussions during the site visit revealed some highly original work and projects. Furthermore important funds have been raised recently that will allow this group to grow to their full potential in the upcoming years.

- Conclusions:
    - Strengths and opportunities

The group proposes interesting, unique and innovative research: hardly any groups globally work within categorization and its cross-cultural aspects. Also, the work on expertise is highly interesting and original.

    - Weaknesses and threats

The group stands isolated in the centre and could benefit from more intensive interactions. Research in isolation is rarely a good idea, as interaction and discussion helps to nurture the development. The committee was under the impression that a lot of common ground could be found with consumer sciences and strengthen the group's research.

    - Recommendations

Team 9 should try and establish collaborations with researchers from related areas. Potentially interesting collaborators could be found within CSGA, in consumer sciences in France and abroad (categorization) and in sensory circles.

The quality of the research suggests that the group, for its benefit, should try to publish in journals beyond the regular food journals to increase visibility, reputation, and interaction.

Team 10 (Past): Lipides Arômes - EQUIPE 11 (bilan) : Plate-forme Sensorielle

Team 10 (project): Regroupement dans le projet – Plate-forme CHEMOSENS

- Name of the team leader: P. Schlich – O. Berdeaux
- Staff members:

	Bilan E 10	Bilan E11	Projet CHEMOSENS
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	0	0	0
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	0	1	1
N3: Number of other researchers including postdoctoral fellows (Forms 2.2, 2.4 and 2.7 of the application file)	0	1	0
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	6	9	15
N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	1	5	
N6: Number of Ph.D. students (Form 2.8 of the application file)	3	3	
N7: Number of staff members with a HDR or a similar grade	0	1	1

- Appreciation on the results

The ChemoSens platform is a recent merger of two previous platforms that support the research endeavours of the CSGA teams. The platform has enormous expertise on what one could broadly define as sensory methodology, that is, a deep understanding of how to assess and analyze various dependent variables relevant to the CSGA. As such, the platform is involved in a lot of research, in partnership with other CSGA teams or alone.

The platform has many public and private partners, which is not that much of a surprise considering its focus on the development of various methodologies and applications. Part of the ChemoSens Plateforme is to applied sensory or analytical methods for the benefice of the CSGA center.

- Appreciation on the impact, the attractiveness of the team and of the quality of its links with international, national and local partners

Considering research activities of some of its member, the plateform contributes to peer review papers. Different team members have been invited to give a presentation at various international conferences. Importantly, the platform frequently organizes scientific events itself. The platform not only supports research, it has its own research projects as well and is in this respect indistinguishable from the CSGA teams. Despite the fact that most platform members are either a technician or an engineer, Chemosens also contains several PhD students and post-docs. The platform has shown ample ability to raise funds, considering their many partnerships for several research projects. The development of tools and methods has led to very interesting results or products, such as the TDS method and the database projects.

- Appreciation on the scientific strategy and the project

Several intersting tools are available (eyetracking systems for example) and are used in its research projects and in collaboration with at least 3 other teams.

Data mining is expected to play an increasingly important role in research. Such mining requires very large databases. ChemoSens is involved in developing several of such databases. This is very valuable for both basic and applied research. The evolution of the organization with the start of the plateform from late January is a strategy that is clear for the scientific and technical part and have to progress for the management one.

- Conclusions:

  - Summary

The ChemoSens platform is the result of a re-organization of previous core services. There are divergent themes and research interests within the platform. Nonetheless, the physicochemical team and the sensory team that comprise ChemoSens have already found joint projects to work on.

  - Strengths and opportunities

The main strength of the platform ChemoSens is its focus on methodology and tool development. The aroma release spectromety measurements may be coupled with subjective assessments (e.g., TDS), which the committee believes the platform is already doing. The central position of the plateform is an important one for the CSGA and could be an opportunity to build up cooperation and transversal project for the whole center.

  - Weaknesses and threats

The 3 main objectives of the platform is (1) to make methodologies and tools available to CSGA, (2) to develop new tools, and (3) external collaborations. It is unclear in what ratio the platform is required to devote time and effort to these three objectives. Currently, the 3 missions are in good balance, but one may question whether CSGA is best served with this balance. Perhaps, the first two objectives ought to be the prime mission for the platform. The management of the plateform and the rules that has to be implemented is not clear enough. Numerous questions has to be solved. It is recommended to define as quick as possible the asked management.

  - Recommendations

1) Prioritize the projects proposed from the insiders of the Centers.

2) Maintain an up-to-date technological park.

3) Keep open the platform to user from outside.

4) Maintain a proper balance between activity of services and setting innovative technologies. This balance should be defined by the board of directorate from the CSGA.

5 • Analysis of the research centre

- Management

The committee is pleased to recognize the major improvements in the organization of the centre. The increase of total funding over the last years is particularly noteworthy. Having said that, some managerial points need to be urgently addressed:

- The 10% grant contribution to the center's budget should be used to encourage high risk/high impact research and transversal projects between teams and not be equally redistributed among researchers. This percentage should be increase if necessary up to 15-25%.

- The overall organization is vertical. Horizontal collaborations and decisions are not developed enough. The financial management should aim at promoting collaborations between research groups, particularly between young researchers.

- Platforms planned for molecular biology and imaging should be created and staffed with engineering and technical personal sooner rather than later.

- Yearly visits by an international advisory board would be very helpful to develop a vision for the future and, as such, should no longer be delayed.

Overall the AERES committee recognizes that most of these points are planned and acknowledged by the directorate but were not yet implemented given the short time of existence of the centre. It is the committee's feeling that these changes should be realized as quickly as possible, as organizational alterations will be more difficult to be realized later.

- Human resources

The centre started only two years ago and from this point of view, the progresses achieved so far are outstanding. Nevertheless, the relocation of some technical staffs should be considered as a priority. Today, the TGU appears more as a mosaic of teams rather than a unique centre with strong interactions and cross-fertilization between teams. During the site visit, many team leaders have highlighted collaborations, but without any factual (or rare) element. Only one third of the ANR projects involved more than one team, and the interest and relevance of the cooperation do not appear clearly.

Some common tools are shared and the progress made with the Chemosens platform is a good example showing how to increase the visibility of the centre and the level of inter-disciplinarily. It is recommended to search ways to improve the discussion (the seminars constitute good opportunities) and to promote transversal projects. One of the elements could be to share the understanding of bottlenecks of applications that some team having strong cooperation with private companies are able to propose with ability of making fundamental approaches. The three dimensions of the centre (Human biology, Food Science, Neurosciences) should be integrated into a unique dimension.

- Communication

A well-conceived communication department is missing. There is no spokesperson to disseminate the Center's research production. Designing a group of persons in charge of the communication is essential to the success of the Center campaign for establishing new relationship with industrial partners, for fund-raising campaign and especially in the case of a broad-based effort of science that is directed to the general public (as it is the case for researches studying food consumption, etc.). A campaign brochure, talks, press release should be implemented to create an awareness of the Center's values. This broad-based public awareness will assist in creating a climate conducive to attracting new projects, new students and new post-docs.

6 • Conclusions

Members of the site visit committee appreciated the Center achievements over the past two years and particularly of its director.

- Strengths and opportunities

The site visit committee found that the CSGA fulfils the mission expected from such center by:

- Delivering good science on food perception, flavor perception, odor-driven behavior, brain responses to metabolites and human behaviors in line with food consumption.

- Demonstrating a good balance between fundamental aspects and a more pronounced clinical orientation, or translational researches, towards applied science.

- Being very much complementary between teams to avoid duplicate.

- Offering an important teaching load to the University.

- Weaknesses and threats

- Low international visibility and competitiveness.

- Low publication profile with very few papers in general high-impact journals. However, it has to be said that most of the publications go in the best journals of food sciences category.

- Recommendations

- The committee identified some teams (Teams #1, #2 and #6) in which a redistribution of technical staff should be considered to strengthen the scientific policy of the Center, as a whole.

- Identification of new leaders is not easy but a priority should be given to find young promising scientist in the existing teams who deserve to be promoted at higher rank in a near future. These promising scientists do exist; some of them should be kept out under the umbrella of their team leader and should be followed carefully.

- The scientific committee would like to highlight a methodological comment. The platform should be eager to develop EEG recordings, a technology very complementary to the existing ones. In contrast, the development of an in-house fMRI platform is considered as distracting, not bringing further opportunities offered already by external collaborations.

- The Center is spread on three sites and relocation into two sites is a priority.

In conclusion, no major problems were identified during the visit and overall the scientific quality and production of the department is good.

Intitulé UR / équipe	C1	C2	C3	C4	Note globale
CENTRE DES SCIENCES DU GOUT ET DE L'ALIMENTATION	**A**	**A**	**A**	**A**	**A**
EYE, NUTRITION AND CELL SIGNALING [PENICAUD-CREUZOT-GACHER-BRETILLON]	A	A	Non noté	A	A
MECHANISMS AND PLASTICITY OF CHEMOSENSORY NEURONS [PENICAUD-FERVEUR]	A	A	Non noté	A	A
FUNCTIONAL PLASTICITY OF OLFACTORY SENSORY NEURONS [PENICAUD-GROSMAITRE]	Non noté	Non noté	Non noté	A	A
MOLECULAR INTERACTIONS AND FLAVOUR PERCEPTION [PENICAUD-GUICHARD-SALLE]	A	A	Non noté	A	A
DEVELOPMENT AND DYNAMIC OF FOOD PREFERENCE AND BEHAVIOUR [PENICAUD-ISSANCHOU]	A	A	Non noté	A	A
FLAVOUR PERCEPTION: PERIRECEPTOR EVENTS AND PERCEPTUAL INTERACTIONS [PENICAUD-LE BO-BRIAND]	A	B	Non noté	B	B
BRAIN, SENSORIALITY AND METABOLISM [PENICAUD-PENICAUD]	A	A	Non noté	A	A
DEVELOPMENTAL ETHOLOGY AND COGNITIVE PSYCHOLOGY [PENICAUD-SCHAAL]	A	A	Non noté	A	A
PLATFOEM CHEMOSENS	Non noté	Non noté	Non noté	Non noté	Non noté
CULTURE EXPERTISE AND PERCEPTION [PENICAUD-VALENTIN]	B	B	Non noté	A	B

C1 Qualité scientifique et production

C2 Rayonnement et attractivité, intégration dans l'environnement

C3 Gouvernance et vie du laboratoire

C4 Stratégie et projet scientifique

Statistiques de notes globales par domaines scientifiques

(État au 06/05/2011)

Sciences du Vivant et Environnement

Note globale	SVE1_LS1_LS2	SVE1_LS3	SVE1_LS4	SVE1_LS5	SVE1_LS6	SVE1_LS7	SVE2 _LS3 *	SVE2_LS8 *	SVE2_LS9 *	Total
A+	7	3	1	4	7	6		2		30
A	27	1	13	20	21	26	2	12	23	145
B	6	1	6	2	8	23	3	3	6	58
C	1					4				5
Non noté	1									1
Total	**42**	**5**	**20**	**26**	**36**	**59**	**5**	**17**	**29**	**239**
A+	16,7%	60,0%	5,0%	15,4%	19,4%	10,2%		11,8%		12,6%
A	64,3%	20,0%	65,0%	76,9%	58,3%	44,1%	40,0%	70,6%	79,3%	60,7%
B	14,3%	20,0%	30,0%	7,7%	22,2%	39,0%	60,0%	17,6%	20,7%	24,3%
C	2,4%					6,8%				2,1%
Non noté	2,4%									0,4%
Total	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

*** les résultats SVE2 ne sont pas définitifs au 06/05/2011.**

Intitulés des domaines scientifiques

Sciences du Vivant et Environnement

• SVE1 Biologie, santé
- **SVE1_LS1 Biologie moléculaire, Biologie structurale, Biochimie**
- **SVE1_LS2 Génétique, Génomique, Bioinformatique, Biologie des systèmes**
- **SVE1_LS3 Biologie cellulaire, Biologie du développement animal**
- **SVE1_LS4 Physiologie, Physiopathologie, Endocrinologie**
- **SVE1_LS5 Neurosciences**
- **SVE1_LS6 Immunologie, Infectiologie**
- **SVE1_LS7 Recherche clinique, Santé publique**

• SVE2 Ecologie, environnement
- **SVE2_LS8 Evolution, Ecologie, Biologie de l'environnement**
- **SVE2_LS9 Sciences et technologies du vivant, Biotechnologie**
- **SVE2_LS3 Biologie cellulaire, Biologie du développement végétal**

UNIVERSITÉ DE BOURGOGNE

La Présidente

à

Monsieur Pierre GLORIEUX
AERES
Directeur de la section des unités de recherche
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Dossier suivi par :
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Dijon, le 1er avril 2011

Objet : Evaluation AERES - S2UR120001813 - Centre des Sciences du Goût et de l'Alimentation (CSGA) - 0211237F

Monsieur le Directeur,

Je vous remercie de l'envoi du rapport d'évaluation comportant un avis globalement positif sur le laboratoire « Centre des Sciences du Goût et de l'Alimentation (CSGA) » qui associe l'université de Bourgogne, l'INRA et le CNRS et vous prie de bien vouloir trouver ci-après la réponse de son Directeur, Monsieur Luc Pénicaud.

Je tiens par ailleurs à souligner le travail conduit par le laboratoire CSGA depuis sa restructuration récente en 9 équipes et une plateforme (ChemoSens) afin de promouvoir l'excellence scientifique et la visibilité internationale des recherches qu'il conduit.

Je tiens enfin à réaffirmer le soutien de l'université de Bourgogne à cette unité de recherche qui occupe une place prépondérante dans un des pôles d'excellence de notre établissement au travers notamment des projets « Investissements d'Avenir » du PRES Bourgogne Franche-Comté.

Je vous prie d'agréer, Monsieur le Directeur, l'expression de toute ma considération.

Sophie BÉJEAN

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Dijon, le 1 Avril 2011

The members of the CSGA would like to thank the committee for the work performed and the overall positive remarks as well as the recommendations that will help to ameliorate different aspect.
Following are some points that we would like to underline or precise.

Appreciation on the Research Unit

- The degree of interactions between teams does not appear sufficient. Although we do agree with this sentence, one has to remember that the Centre as such was created only one year ago. Furthermore there are numerous programs in which at least two teams participates in. This was true over the past and has been reinforced since one year (common ANR, Burgundy funding etc…). Indeed this is not yet visible in term of joint publication.
- This is in connection with another point raised by the committee concerning the recommendation to encourage innovative research project between groups and to allow part of the basic funding. Even if this has not been done during the first year, this is planned and has been announced in the document. We planned to sustain with specific funding two or three innovative or risky projects between at least two research groups over a one or two years period
- It appears that we were probably not clear enough concerning the organization of the directorate. The decisional, executive and consultative aspects of the CSGA are well-separated entities. What is in place is exactly what the committee recommends? (see the document)
- We agree with the suggestion of having an international advisory board. We will do our best to put that in place before the end of the year.
- A communication department is already in place. This once again was probably not clear enough in the presentation. Poster, brochure, internet site and other means are already available or in construction. This should help to get a better visibility.

Research group 1

The research group coordinates 2 ANR and not only participates in and has coordinated a European network and not participate.

The postdoc attractiveness is poor? We do not understand this statement since, we had 8 post-doc in the period considered.

Research group 2

The AERES committee has pointed out the novelty, the originality and the appropriate balance between risk and feasibility of our projects, as well as the satisfactory publication level. However, the committee noticed a too large number of subthemes that would be detrimental for the visibility of our team. Taking into account this remark, we will prioritize a limited number of high impact projects. We also intend to improve our involvement in national and international networks. The committee is worried by the team leadership that is shared by two group leaders. In agreement with the CSGA director, we think that this co-direction is strength to cover the whole research field of the team.
Page 13, the exact number of publications co-signed by PhD and poctoral students is 50% (instead of 25%).

Research groups 3, 4, 5, 6, 7, 9

These teams thank the committee for their comments and recommendations and largely agree with the main conclusion. They have no comments to what has been written.

Erreurs factuelles

Research group 8

We would like to precise since 2008, we published four papers in top-level nutrition journals (i.e. in journals in the first quartile of their category, see below): 2 in British Journal and Nutrition (IF=3.446, rank: 11/66), in 2009 and 2011; 2 in Clinical Nutrition (IF=3.274, rank: 14/66), in 2008 and 2010.
We agree that we must publish more in top-level nutrition journals and we will continue our efforts to publish in such journals. Since the end of 2009, working papers are presented and discussed in regular seminars of the team to increase the likelihood that they are accepted in top-level nutrition journals.

Platform ChemoSens

The ChemoSens platform thanks the committee for its recommendations which could be summarized as first organize the platform management more thoroughly and secondly do less external collaborations in order to strengthen internal and methodological research. Management tools such as scientific, user and executive committees are already in place. A user chart of the platform is available and describes precisely how to use facilities and instruments and how to access to human resources of the platform. These aspects were simply not covered in the oral presentation and very briefly in the project document, but they do exist. Regarding external collaborations, we would like to emphasize that they are compulsory to deserve the Ibisa label to which we plan to apply soon.

Luc Pénicaud
Dr CNRS

Directeur CSGA