

## Newsletter

This newsletter brings together two mission reports, namely one in Ivory Coast (mathematics), and in Algeria (artificial intelligence).

Moreover, physicists who have created the " Puya Internationale", in particular to boost the teaching of physics in Latin America, ask us to make them known.

Finally, quick minutes of the recent General Assembly will be found. Among the decisions, based on the increasing number of actions worldwide, it was decided to publish this newsletter every two months.

Good reading. ■

Prof. Robert Laurini, president of USF-AWB.

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### Report of Denis RICHARD's mission from November 28 to December 5, 2018 in mathematics and bioinformatics at the University of Science and Technology of Ivory Coast (USTCI)

I was very well welcome during this mission, with driver and car at disposal. The driver, Justin ADIAN, is perfect: cautious, available, competent for many practical problems, punctual and sympathetic. I have met people everywhere respectful (almost excessively) of the quality of teacher and warm.

Let's get to the mission itself.

**1 Students:** I have to give two lectures, with assistance from over a hundred students each time. The first was called "a few algorithms including the so-called MI-MU, from POST" and the second "of the logarithmic count and the Stone Weierstrass theorem". The students seem to have followed well and I hope that the very warm reactions, the questions and the... photos (taken by students) do not fall too much in African friendliness... One has to

notice, because it is not always the same thing in France, the way students are listening and behaving.



Denis Richard and Dali Ishmael in Abidjan

**2 In these two lectures,** my goal was to give meanings to mathematics, to show some problems that seem unaffordable and whose algorithmic solutions are simple and elegant. As in front of all student audiences (Algerian, Chinese, Canadian, French, ...), I taught to students that the integer part of the logarithm of a number written in base ten is its number of digits minus one!! This is what I call the search for the often neglected meaning in

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<sup>1</sup> For any contact: Pr. Robert Laurini, President of USF-AWB, 20 Rue René, F- 69100 Villeurbanne; Email: Robert.Laurini@usf-awb.org. Web site: <http://www.usf-awb.org>. Association according to French laws, established on January 2, 2010.

mathematics. I also established the historical and scientific origin of the logarithms by Neper which provided the astronomers at the time with the means to bring back all the calculations (multiplication, extraction of roots...) to additive arithmetic.

**3 Meetings with authorities.** They were held in a permanent courtesy manner, there were several attendees including one with the president of the IRAO incubator in which five start-ups were created. (This question of the incubation of young spin-offs interests me particularly by the fact that I worked in Clermont on these problems).

**4 Meeting with biology professors.** I had proposed at the meeting at IRAO that Tuesday morning (December 4, be devoted to a consultancy meeting to evaluate the possibility of exploring (resources and lacks) the introduction of Bio-informatics to the USTCI. This material is extremely useful in the biological streams by providing researchers and potential start-ups. In fact, this meeting has turned into a conference in front of a hundred students who were beginners in biology.

**5 The information and the precise description of the university.** I was hoping to be able to write in this report an accurate description of the programs and channels of this university. I was not able to do so in the allotted time because I had not had time to make enough contacts.

For further information, please contact Prof. Denis RICHARD <denisrichard1942@gmail.com> ■

### **Towards a laboratory in applied artificial intelligence in the Sahara**

Following his book on engineering knowledge in Smart Cities, Robert Laurini was invited by the University of El Oued in Algeria for seminars in artificial intelligence last December. Located in a large oasis of the Sahara, close to the Tunisian border, this city houses 200 000 inhabitants with 3 million of palm trees. In addition, the region is the first in the country for potatoes.

This university was created about ten years ago and hosts nearly 20 000 students whose 2/3 are women. Alas, because of chaotic urbanization, wastewater is poorly controlled and pollutes the groundwater table: announced disaster if nothing is done!

It is in this context, it was decided to create an artificial intelligence laboratory applied to the specific problems of this region, that is, agriculture intelligence, smart cities, etc.



The role of USF was to consolidate the request for the creation of this laboratory, emphasizing socio-economic and international collaborations that could in synergy, both to boost university research, and to help economic development and reduce pollution.

The role was also to discuss with each researcher and PhD student in order to better understand their difficulties, especially due to the remoteness and weaknesses of research equipment, the doctoral supervision and the links with the socio-economic sectors. But the most delicate point was the subjects of these: indeed, the proposed subjects, although corresponding well to high-tech themes, were generally too broad; a single doctoral candidate had been given a subject that could be suitable for a very well-equipped laboratory of 10 people! Our role has been, for each of them, to refocus the issues on specific questions that could be resolved within the 3-year deadline.

For more information: robert.laurini@usf-awb.org. ■

### **The "Puya de Raimondi<sup>2</sup>" association has been given a new look and becomes the "PUYA INTERNATIONALE".**

The Puya de Raimondi association was created in 2004 by two former development workers and a Peruvian professor. The purpose of the association was to help Peru's scientific universities to recover from the civil war in Peru (Shining Path...). Conferences and specialized courses were then organized in

<sup>2</sup> Du nom d'une plante particulière de la Cordillère des Andes.

2005, 2009 and 2012, bringing together several hundreds of researchers and students. In parallel, scientific equipment (dye lasers, a scanning electron microscope) was shipped to Lima and installed; in addition, many students were admitted in France to pursue master's or doctoral studies. During this first phase, French research organizations (CEA, CNRS), the French Ministry of Foreign Affairs (MAE) and scientific equipment manufacturers provided the necessary resources to organize these events.



In 2009, the French Embassy in Lima, after congratulating the association for the quality of all these exchanges, asked it to organize a collaboration with the countries of the Andean Community: Bolivia, Peru, Ecuador, Colombia and Venezuela. This has been done with the creation in 2010 of an annual summer school in nanosciences called « NanoAndes » and the creation of a network of researchers from different disciplines (physics, chemistry, biology, ...) involved in nanosciences and who originated from these countries. This school and network quickly spread throughout Latin America and the "NanoAndes" label is now well known by many universities.

In 2016, to ensure the continuity of the school, the CNRS proposed to create an International Research Group (GDRI). This includes three French laboratories and five Latin American partners. Since then, the school has been organized in Argentina in 2017, in Mexico in 2018 and in 2019 it will be organized in Chile and then in 2020 in Peru. In addition to these resources provided by the CNRS, the MAE and the Foundation Nanosciences de Grenoble contribute to supporting the NanoAndes network and its associated operations.

Since 2016, this initiative has been complemented by a second school focusing on digital technology (hardware, Internet of Things and BigData). The "MEMS-AL" school

(MEMS for Latin America) was organized in 2017 in Bogota and then in 2018 in Mexico. The objective is to foster the development of a community of researchers active in the digital world. The same model of summer school was chosen, theoretical courses in the morning and practical works in the afternoon (Master's level, PhD).

In parallel with these Latin American activities, and in interaction with the Grenoble innovation campus, MINATEC, two other training activities have just been added to those of La Puya de Raimondi. It is the MINATEC-Vietnam school which has been co-organized with our Vietnamese colleagues in Ho Chi Minh City every year since 2006, and recently the NanoMada school in Madagascar. In view of the rapprochement of these schools and future collaboration projects with universities in developing countries, the Board of Directors of the association has decided to convene an extraordinary general meeting to propose to modify the name, objectives, scope of action and to renew the Board of Directors of la Puya de Raimondi. At the end of this extraordinary general meeting vote, the Puya de Raimondi became the PUYA INTERNATIONALE!



Today, as contacts have been made with local universities (GIANT, UGA, INP,...), sister associations (Universitaires sans Frontières, Electricité sans Frontières,...), start-ups and larger companies, the PUYA INTERNATIONALE has taken as its objectives to share and promote its know-how internationally, to develop the exchange of good practices and to set up stable and sustainable structures benefiting the entire community.

Information: Prof. Robert Baptist President of Puya Internationale,  
 <robert.baptist@free.fr> ■

**Rapid minutes of the General Assembly and the Board meeting of January 21, 2019**

At 18:00, an ordinary General Assembly took

place on January 21 in the metropolis of Lyon. Currently USF-AWB regroups 54 members up to date of contribution. Given the proxies received, the quorum was reached.

In the first place, the incumbent president, Robert Laurini, presented the management report of the year 2018, from which it emerged an increase in our activity and a recognition by the French Embassies, after the meetings made with the French Republic president advisors at the beginning of the year: at present we have received around fifteen requests a year, but not all of them give rise to missions. Our quarterly newsletter is distributed to more than 4500 contacts (French version) and 1800 (English version). It was decided that the pace will pass every two months in 2019.

Then the Treasurer, Alain Jouandeau, presents two financial reports, one in the sense of the accounting of the associations, and the other with the valuation of the volunteer activities and the external financing (travel and accommodation expenses paid directly by universities or other organizations that seek help or help us in funding).

These two people are given discharge at the unanimity minus a voice.

As USF-AWB was founded in the winter of 2009-2010, it will be a dignified celebration of the tenth anniversary at the end of this year.

One of the purposes of this General Assembly was to modify the statutes written in 2009. Agreement unanimously minus a voice.

Then, follows the election of the board of directors for the next three years.

Once the AG is closed, the new board of Directors elects the Bureau and the results are as follows:

- President: Robert Laurini,
- Vice-Presidents: Xavier Alphaize, Alain Mille, and Paul Rousset,
- Treasurer: Alain Jouandeau,
- Secretary Louis Flamand,
- Other members of the board: Jean-Pascal Lyonnet and Denis Richard.

Robert Laurini, founder of USF-AWB, says it will be his last term as president.

Full reports are available only to members. ■

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