

Volunteer Lecturer Program: Exit Survey

Name of Volunteer: Dr. Kasso A. Okoudjou

Email Address: kasso@math.umd.edu

Home Institution: University of Maryland, College Park

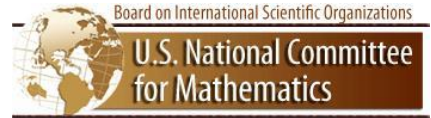
Position in Home Institution: Associate Professor of Mathematics

Arrival and Departure Day in Host Country: Arrival: January 7, 2014. Departure January 26, 2014.

Who was your main contact in the host country (name, affiliation and email address): Professor Joel Tossa, Director, Institut de Mathematiques et de Sciences Physiques (IMSP), joel.tossa@imsp-uac.org

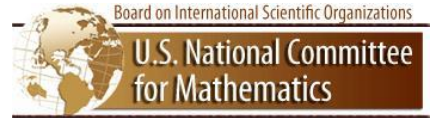
Please answer the following questions:

- 1) Location (country, city, institution) of your lecture: Benin, Dangbo and Porto-Novo, IMSP
- 2) Dates of Lecture: Tuesday January 8 through Friday January 24 2014.
- 3) Subject and title of the course: Harmonic Analysis. Title: Harmonic analysis, time-frequency analysis, and wavelets.
- 4) How often did you teach a course? I taught Monday through Friday 6 hours each day (4 hours in the morning and 2 hours in the afternoon).
- 5) How many students did participate in the course (s)? I had 22 students with 15 present at every single lecture.
- 6) Background of Students: Undergraduate/ Master/ PhD Students? The 15 regular students are in a Master program. About 7 Ph.D. students would join in the course on some occasion.
- 7) Please provide (if possible) any schedule of activities/list of topics covered during your visit. I lectured mornings and afternoon from 1/8/2014 to 1/24/2014. I gave a seminar to the entire Institute on 1/22/2014. I had regular office hours for students and talk collaboration with Dr. Yebeni Kouagou who was my assistant. The outline of my course is as follow: (1) Review and Preliminary; (2) Fourier Transform; (3) Fourier Series; (4) The Sampling Theorem; (5) Discrete Fourier



Analysis; (6) Short-time Fourier Transform; (7) Gabor frame theory; (8) Wavelets.

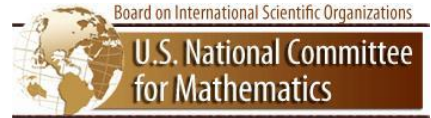
- 8) Did you develop or follow a prescribed syllabus or did you write your own? Was it available to the students before the course or when the course began? Please also mention the references you used or any textbooks that were referred to: I wrote the syllabus, which is based on past courses I have given at my home institution. I wrote a lecture notes that was available to the students at the start of my first lecture. I updated the lecture notes through my stay and gave both hard copies and electronic copies of the notes to all the students. To prepare my notes I used: (a) An Introduction to Harmonic Analysis, by Y. Katznelson (I offered a copy of this book to the Institute); (b) An Introduction to Wavelet Analysis by D. Walnut; (c) A First Course in Wavelets with Fourier Analysis, by A. Boggess and F. J. Narcowich; (d) Foundations of Time-Frequency Analysis by K. Groechenig.
- 9) Did you use any books, classroom material, AV, or other technology-based materials? I used some AV material to display part of the course. I also display some graphs I generated in Matlab.
- 10) What type of assessment tools did you use? Attach if available, any notes or exams/quizzes that were distributed to students. I gave many homework assignments through the lectures, and I went over most of them with the students during the next lecture. I gave and graded a final exam.
- 11) In which language was the course given: My course notes were written in English, but I delivered my lectures in French.
- 12) Was the course language, the native language of the students? French is the native language in Benin.
- 13) Did you give any public lecture, discussed with local staff issues regarding curriculum? I gave a seminar talk on Analysis on Fractals for the entire institute. I discuss scientific collaboration and possible supervision of Ph.D. students with Dr. Yebeni Kouagou who has background in Harmonic Analysis and is trying to set up a research group.
- 14) Where did you live? (e.g. hotel, hostel, on campus, in city e.g.) In the City (Porto-Novo), the Institute owns a house I was put in.
- 15) Do you have any recommendations/suggestions to the professor who will visit the university in the future (also regarding accommodation, health and visa issues)? Just make sure to have Malaria medicine and get all the recommended vaccinations for Benin.



-
- 16) Would you like to share anything else like any particular experience, testimonial etc.? It was a great experience. I met with dedicated students who wanted to learn. They had limited access to good textbooks and the institute should try to have a better Internet connection. Also access to journal and other online resources could help the students. I left the institute many of the textbooks I used to prepare my lectures.
- 17) Do you have any pictures which you would allow us to put on the IMU- CDC website? Yes, I'll add them as attachment.
- 18) Are we allowed to publish your answers above? Yes, but not the lecture notes (I'm co-authoring a monograph and I some material from the current draft of the monograph to prepare my lecture notes).

In case you allow us to publish your answers above, the following answers will not be published.

- 19) The goal of the lecture is to provide an intensive 3-4 week courses at universities in the developing world at the advanced undergraduate level. These courses should have a student audience of 20 or more, be controlled, with examinations, and be part of a regular degree program at the university at which they are offered. Was this goal achieved? Yes.
- 20) The lecturer should be assisted by a local mathematics professor who prepares the students beforehand, assists when necessary during the course, and takes care of any necessary follow-up. Was you local assistant provided, and was his/her work satisfactory? Yes. I was assisted by Dr. Yebeni Kouagou who did a great job.
- 21) What are your principal observations concerning this experience? IMSP is really trying to expand its research group and this course was designed as such.
- 22) What did you like the most about your experience? The willingness and enthusiasm of the students.
- 23) What did you like the least about your experience? There were a few logistical issues during my first two days, but things were quickly resolved. Also, January seems a very hot month in Benin, so people might consider going in June-August.
- 24) How could your experience be improved? With a better Internet connection, I could have do more demos with Matlab. The Institute should be encouraged to get a better connection.
- 25) How would you evaluate the overall utility of the work to your students?



-
- Drop Down: Outstanding/Very Good/Average/ Marginal/Unsatisfactory : Very Good (I met individually each student the last day of my stay and all of them expressed their appreciation to the course).
- 26) How would you evaluate the overall appropriateness of your living arrangements, care taken of your needs by your local host, etc.?
Drop Down: Outstanding/Very Good/Average/ Marginal/Unsatisfactory: Very Good.
26. Have you developed creative teaching skills as a result of this experience? (i.e. since English/ French/ Spanish might not be the first language of the students, you might have communicated the concepts in different ways OR the lack of resources has forced you to come out with a different approach) Nothing to add.
27. Any other comments you would like to share with us? No

Thank you very much!