

The Linnaeus-Palme Exchange program

Established between the Department of Chemistry and Molecular Biology, University of Gothenburg, and the Department of Chemistry, UWI, Mona Campus, Jamaica



Waterfall in the northern mountainous part of Jamaica

A program evaluation report for the period 2006-2012

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The University of the West Indies

Oriens ex occidente lux – A Light Rising from the West

“The University of the West Indies is a dynamic, international institution serving the countries of the Commonwealth Caribbean: Anguilla, Antigua/Barbuda, the Bahamas, Barbados, Belize, Bermuda, the British Virgin Islands, Cayman Islands, Dominica, Grenada, Jamaica, Montserrat, St. Christopher-Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago and the Turks and Caicos Islands.”



The light rising from the West in the symbolic metaphor of the University Coat of Arms



The University of Gothenburg

The University of Gothenburg has 37 000 students and 5 900 employees. The University of Gothenburg is therefore one of the largest universities in Northern Europe. It is also one of Sweden's most popular universities with the largest number of applicants to its many programs and courses. Research and education is carried out at some forty departments within most disciplines, making the University one of the nation's most diverse universities.

Even from an international perspective, the University of Gothenburg is exceptionally large with excellent expertise in a series of dynamic research areas. Cooperation with Chalmers University of Technology, the Sahlgren's University Hospital, as well as the rest of society and the business area, has steadily deepened in recent years, as have the international contacts and other collaborative projects.



UNIVERSITY OF GOTHENBURG



The administration building at the University of Gothenburg

Introduction and Background

The student and teacher Exchange program between Sweden and Jamaica 2006 – 2012

In the fall of 2005 University of Gothenburg (GU) advertised the Linnaeus-Palme (L-P) program for academic exchange with developing countries. We immediately accepted the challenge to start an exchange program as we considered such an activity to be imperative for the Department of Chemistry at the University of Gothenburg as well as for any partner University in developing countries.

Possible exchange partners on the L-P program's list were Universities in particularly Asia, Africa and in the Caribbean (Caricom) countries. An internal review of Chemistry Departments from the listed Universities given in L-P program's call, relatively quickly directed our interest towards a certain exchange partner – the Mona Campus at the University of the West Indies (UWI), Jamaica. Their Chemistry Department emerged as the partner that we considered most appropriate for our initial contacts. The range of Chemistry courses at the Mona Campus was such that our students would be able to utilize most of them within their degree studies at GU. Jamaica's official language, English, guaranteed participation by both teachers and students from GU in the chemistry education without substantial problems. It also guaranteed teachers and students participation in cultural activities, etc. in Jamaica and facilitated more effective communication in the society.

Furthermore, we found the two Chemistry Departments to be essentially equal in size with respect to number of students and their academic performance. In addition, the course structures were similar at the undergraduate level (especially the basic/introductory courses and also a few of the more advanced courses). UWI offers courses in the field of, natural products; food, and agriculture, which are absent in the University of Gothenburg course structure but were of interest for students and teachers in our Pharmaceutical Chemistry program. University of Gothenburg, on the other hand, offers a more extensive range of courses in Atmospheric and Marine Chemistry, to the benefit of an environmentally sustainable society in Jamaica. Both Departments have, of course, other special courses of interest and also similar courses containing related laboratory and analytical techniques. Overall, we found that there were good prospects for a successful exchange program for teachers and for students because no large structural problems could be foreseen. The exchange should work especially well during the spring semesters when the programs at both Departments were similar, while at the same time highly complementary courses were identified.

At this point the Head of Department at UWI Professor Ishenkumba Kahwa was contacted via email and he immediately expressed his consent to jointly seek funds for a teacher

exchange within the framework of the L-P program and Dr. Novelette Sadler-McKnight was commissioned by Professor Kahwa to be the contact person at the UWI.

An application was written in the fall of 2005 and submitted to the International Program Office, which organizes the L-P program. This application included a request for funding for a teacher exchange between the Chemistry Departments for the academic year 2006/2007. The application also included funding for one week of initial visits and planning time at the two Universities. The application was approved and funds granted and our Exchange program started with the initial planning trips during the fall of 2006, and for the teaching staff mobility period January – June 2007 was chosen as the most suitable time for the exchange.

During the planning weeks it was agreed to file an application for a student exchange for the academic period 2007/2008. The application didn't contain any teacher exchange since we wanted to await the outcome of the assessment of the first teaching staff mobility term. Unfortunately the International Program Office did not grant any funding for the academic year 2007/2008. We acknowledged the reasons for the rejection of this application and filed a renewed application for the academic year 2009/2010 in which requests for funds for both student and teacher exchange were included. This extended and revised application was approved and since then, L-P exchange funds have been granted for teacher and student exchanges every academic year. Recently our seventh application was approved and we have obtained funds for the upcoming academic year 2013/2014.

Since our Exchange program has lasted for five years it is normal that the L-P Foundation provides funds for an evaluation trip (after an application from the program), which should cover the travel cost and the cost of living for two responsible officers at the Swedish Department to visit the partner Department in Jamaica. Funding was granted from the L-P Foundation for the academic year 2012/2013 with the aim to evaluate the effect of the Exchange program activities at the two departments.

Palme- and Linnaeus teachers/students – exchange periods

Students who have participated in the Exchange program have spent the entire spring semester during the exchange year at the host department while exchange teachers' period has ranged between 21 and 40 days. Students and teachers who have participated in the Exchange program to date are listed in Tables A1-A4 in the Appendix 1. In these tables we have also included information on what each participating students is currently engaged in.

Selection process for Palme- and Linnaeus students

The two Departments have a similar selection process, which is used to find suitably qualified and motivated students to take part in the Exchange program. In the first step the students are required to file a letter of interest with a short CV included to the respective project coordinator. The project coordinator reviews the applications with the view to establish if the student meets the standards and requirements, which we have defined for participation in the exchange program.



A view of the entrance to the Chemistry Department at the University of West Indies, Mona Campus, Kingston, Jamaica



Chemistry lab work is conducted in modern laboratories at the Chemistry Department, University of Gothenburg, Sweden

Evaluation of the Exchange program

When an Exchange program has been funded for minimum three years, the L-P foundation offers a possibility to seek support for an analysis of the outcome of the program, as already mentioned. The aim at this point is to follow up, assess and review not only the academic part of the program but also the global outcome and the administrative routines. When a program has been funded and active for five years the International Program Office suggests a comprehensive evaluation with much higher requirements on the outcome, in particular a detailed assessment of the results with reference to the predefined goals from the academic perspective, the international/global perspective and the outreach perspective of the program. Financial aid for program officers to undertake an evaluation journey was applied for and granted from the L-P foundation, as previously stated. These funds were used to support an visit to the Mona Campus, UWI, in April 2013 by the project contact person/ project coordinator Dr. Åke Nilsson as well as project officer Professor Lennart Sjölin. In addition to analyzing the extent to which the program activities have coincided with and met the predefined goals from the L-P Foundation's definitions as well as our local definitions, we have also analyzed the extent to which the project has been beneficial to the two Departments. Furthermore, at place we have from *in situ* discussions focused on how a pertinent future cooperation in the long term could be developed, as a bilateral program hopefully funded by other means, and in view of the expressed success of the current program. We then concentrated our effort not only on the academic perspective, the global perspective but also on a joint scientific perspective.

Goals and objectives of the Exchange program

It is important for understanding of our evaluation to summarize the goals that the L-P Foundation sets, as well as the locally extended goals that we have developed in cooperation with the Department of Chemistry, UWI, Mona Campus, which are consistent with the Foundation's goals but are more detailed. See Appendix 2 for a detailed description of the goals and the objectives. We will frequently refer to these goals and objectives in the text.

Methodological description of the analysis

Our evaluation is based on four different elements; personal reports from the participating teachers and students; interviews of all the teachers and students; a comprehensive questionnaire that the exchange students have answered; and finally, additional discussions in cases where we have found a necessity for extra clarification. Furthermore, we have interviewed the administrative staff involved in the program, the Department Head, the Dean and the Registrar at UWI to obtain a firm opinion on how our joint program has been assessed and appraised at the management level at UWI, Mona Campus. At the end of our stay we also had a discussion with our Consul General at the Swedish Consulate in Jamaica.

The personal reports from teachers and students were for us the starting point for the interviews that we thereafter undertook (Tables 1-4 contain lists of all participating teachers and students in the Exchange program. These tables are found in Appendix 1). The interviews were designed such that we focused on the objectives that are described in Appendix 2 and concentrated the discussions around the international, global perspective and the academic perspective, in turn. Questionnaires that students had previously responded to (Appendices 3 and 4) have been designed so that the questions also reflect the goals that the L-P Foundation has defined as well as they reflect our own extended local goals. In these questionnaires the questions are divided into two major sections — the international perspective and the academic perspective. All exchange students who participated in the program except one have answered and replied to the questionnaires.

We have in particular analyzed each submitted summary from the participants in light of our objectives (goals) and noted which objectives (they are numbered) the text in each paragraphs follow. For each report, we have thus been able to determine which objectives the exchange student/teacher specifically would like to highlight. This, together with the results of the interviews and questionnaires were subsequently averaged on a scale of 1-5 and the results are summarized in Appendices 5 and 6.



The tropical garden on the UWI Chemistry Department grounds offers a moment of tranquility for students, teachers as well as visitors

Exchange students' goal achievements concerning the global perspective

Based on questionnaires and additional interviews, we have put together a summary describing the Palme and Linnaeus students' assessments of the Exchange program from a global and international perspective. The primary aim as declared by the International Program Office is given in the following frame and provides justification for our investigation of this goal achievement:

“The aim of the Linnaeus-Palme program is to raise the quality of higher education by integrating global perspectives into the learning process. In this way, Sweden and its collaborative partners get prepared to face global challenges.”

It is therefore relevant to begin the analysis by using our extended local goals as guidelines in an attempt to determine primarily the experience of the stay in a foreign country and foreign culture by the students. To begin with we categorized their responses in relation to our local objectives (goals) 1.1-1.3 and 3.1-3.3 on a tentative scale, 1-5, where 5 is the highest goal agreement. We present the results from our first investigation in Table 5 which is included in the running text since references to the results are frequently made in the continuous paragraphs and sections of the analysis. A graphical representation of the results is given in Figure 1.

Table 5. Summary of questionnaire and interview results related to parts of the target description (Appendix 2) in which the number of the goals are set horizontally and the average rating on a 5-point scale vertically. 1 = low goal agreement, 5 = high goal agreement. Six Palme and seven Linnaeus students answered the questionnaire.

Goal	1.1	1.2	1.3	3.1	3.2	3.3
Palme	4.83	4.83	3.67	3.17	4.67	4.5
Linnaeus	4.57	4.42	4.42	3.29	3.71	3.57

- 1.1: To what degree has the exchange program increased your international perspective?
- 1.2: To what degree has the exchange program increased your cultural perspective?
- 1.3: To what extent has the exchange program increased your knowledge regarding distribution of global developing resources?
- 3.1: The global perspective in the student exchange sub-program
- 3.2: The higher degree of independence and increased self-awareness
- 3.3: The student in a research environment

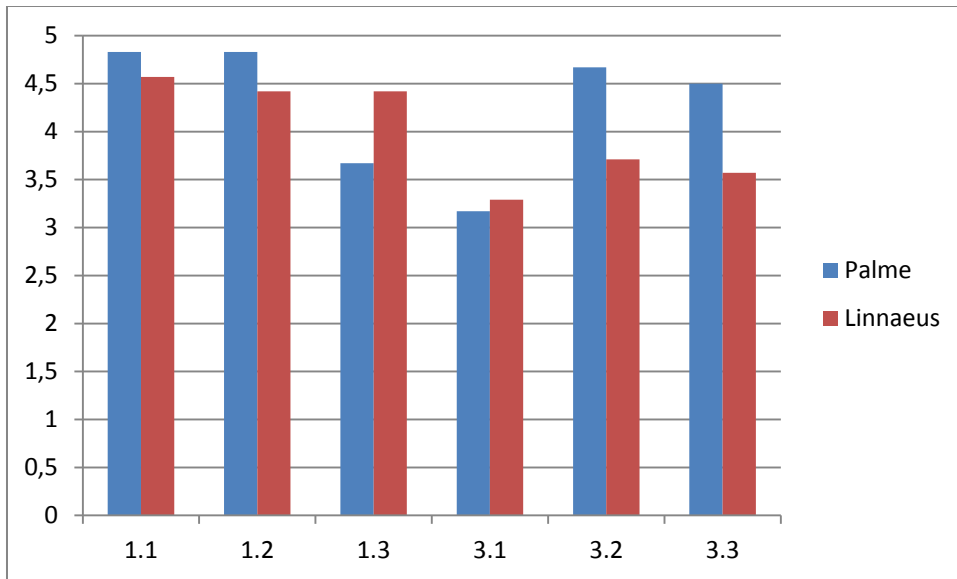


Figure 1. Graphical representation of Table 5.

In the next step of our analysis a questionnaire was compiled, as has been described before, for the Palme and Linnaeus students and their responses to the three of the first seven questions (Appendices 3 and 4) are given as an average number on a scale 1-5 in Table 6, grouped as Palme and Linnaeus students. The average responses to the questions are also presented in a supplementary graph, Figure 2, such that a comparison between the two groups can be made in a simplified manner.

Table 6. Summary of questionnaire and interview results related to parts of the target description (Appendices 3 and 4) in which the number of the goals are set horizontally and the average rating on a 5-point scale vertically. 1 = low goal agreement, 5 = high goal agreement. Six Palme and seven Linnaeus students answered the questionnaire.

Quest.	5	6	7
Palme	4.67	4.17	3.17
Linnaeus	4.42	4.00	3.29

- 5: To what extent has the exchange program promoted insight into different traditions and taboos?
- 6: To what extent has the exchange program promoted a deeper insight into various backgrounds for ethnic stereotypes?
- 7: To what extent has the exchange program provided you insight into the political life, particularly concerning international relations?

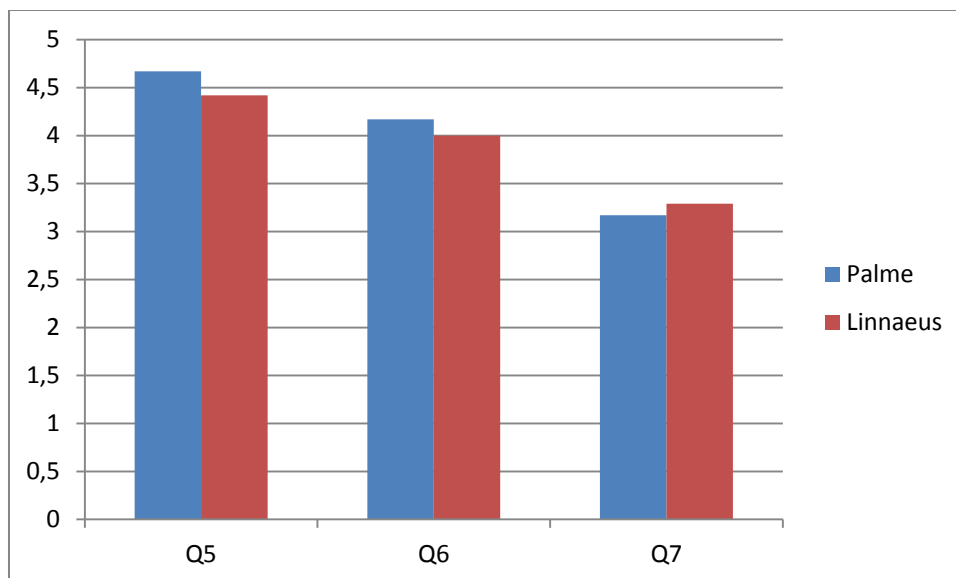


Figure 2. Graphical representation of Table 6.

It is obvious from the above presented results of our primary analysis that the exchange students are very positive to the outcome of the exchange. They further believe that the stay in the new international environment, and the opportunities this consequently creates to understand different global contexts, has been very important for their personal development. In addition, it is indicated in the graphs that the Jamaican exchange students, are even more positive to the exchange opportunity than the Swedish exchange students from the international perspective, local goal number 1.1. To further strengthen these conclusions we interviewed all, at that time, available Palme students during our evaluation journey. They confirmed our interpretation from the answers to the questionnaires and firmly stated that the participation in the Exchange program has had a substantial impact on their personal development as young students. Nijole Young summarized this in a very nice way in her personal report after the completion of her exchange period:

“In terms of the long term impact of being able to study in a foreign country, the program was beneficial in providing me with increased self-confidence and it has had a lasting effect on my perception of the world as well as facilitated interactions between myself and people from different cultures. I was also able to better understand my own cultural values and biases. As a result of the challenges associated with living in a foreign country such as different cultural norms, adapting to a new and unfamiliar environment, learning to speak and communicate in a foreign language, new academic expectations to meet, I was able to improve my time management skills as well as accomplish my experimental project despite cultural differences, communicate despite barriers as well as adapt to new environments.”

Exchange students' achievements from an academic perspective

We have also analyzed the exchange students' view of the academic environment at the receiving Department. Again the pre-compiled questionnaire was used for both Linnaeus and Palme students. This time around 40 questions were selected from a huge centrally conducted statistical investigation at the University of Gothenburg open for all students in all Faculties. These questions focused on the academic environment, the reception, the seminar rooms, the laboratories and so on, and it is important to again note that all the exchange students except one have answered these questions.

Below in Figures 3, 4 is a compilation of poll results. For each question, we have calculated the average ratings on a 5-point scale and these numbers are enclosed in Appendices 5 and 6. The graphs represent the effectiveness and goal achievements in respect to the academic part of our exchange program. Again, please review Appendices 3 and 4 to obtain the details of each question in the questionnaires.



Presentations of group work, the normal activities of studies in chemistry

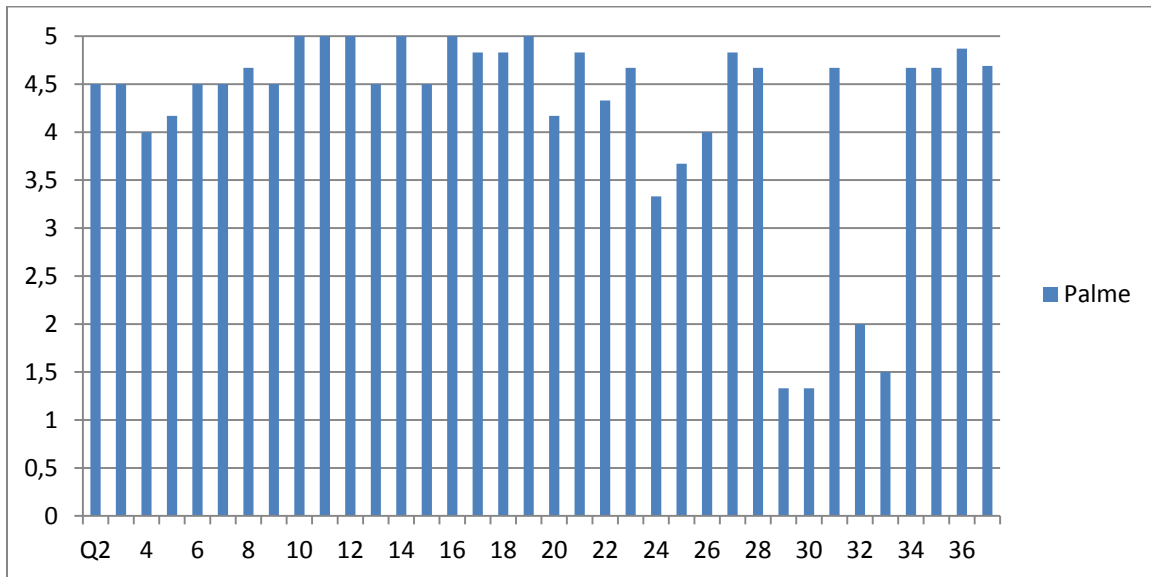


Figure 3. Questionnaire result of Palme students' learning situation. The number of the questions are set horizontally and the average rating on a 5-point scale on the Y axis. 1 = low agreement, 5 = high agreement. See Appendix 3 for the questions. Questions 29, 30, 32 and 33 are negations:

29. It was difficult to obtain friends (1 = not at all)

30. It was difficult to feel relaxed (1 = not at all)

32. I often felt like being alone (1 = not at all)

33. I became stressed because expectations of classmates (1 = not at all)

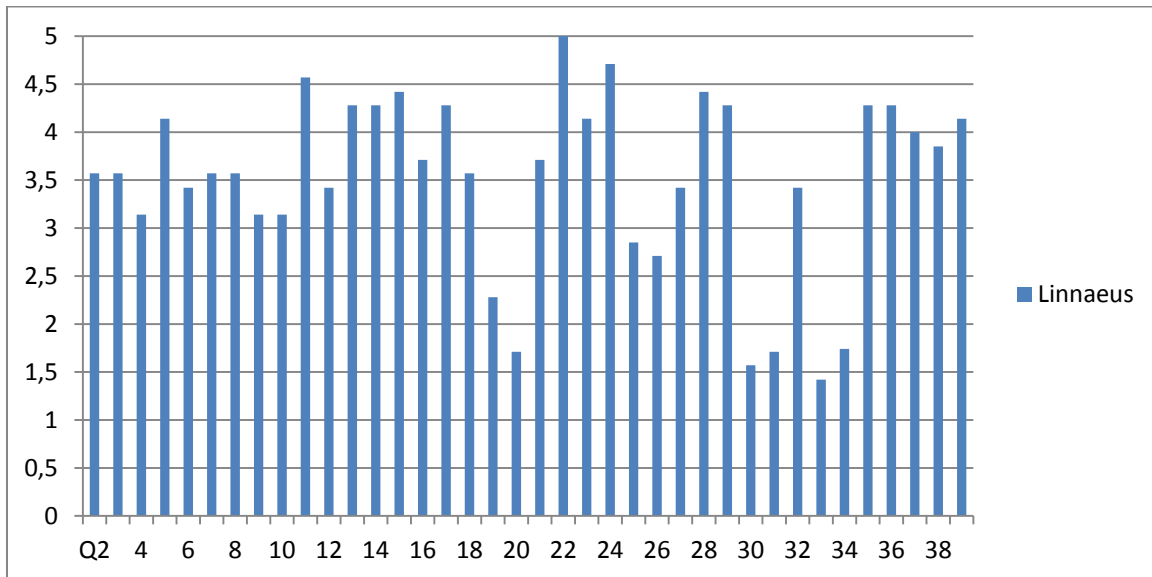


Figure 4. Questionnaire results of Linnaeus students' learning situation. The number of the questions are set horizontally and the average rating on a 5-point scale on the Y axis. 1 = low agreement, 5 = high agreement. See Appendix 4 for the questions. Questions 30, 31, 33 and 34 are negations:

30. It was difficult to obtain friends (1 = not at all)

31. It was difficult to feel relaxed (1 = not at all)

33. I often felt like being alone (1 = not at all)

34. I became stressed because expectations of classmates (1 = not at all)

Results of the exchange students' academic experiences

Again, the exchange students were generally very satisfied with their academic environment. Also in this part the Jamaican exchange students were more positive than the Swedish exchange students were. It is especially interesting to note that the Jamaican students have unanimously given top scores to a number of questions in this section of the questionnaire, while the Swedish students provided only one top score. The two groups' both awarded top scores (the number of questions in the questionnaires differ a bit) with reference to the host Departments' project coordinators/contact persons (Drs Åke Nilsson and Novelette McKnight) who obviously have had a great role in the success of the Exchange program (remarks from LS and JB). This is nicely described by Jannie Staffansson who has been a Linnaeus student at UWI:

“Jag kommer aldrig kunna tacka Mrs McKnight nog för allt hon gjorde för mig. Hon var en enorm trygghet att ha och blev även en god vän. Hon gav mer av sig själv än vad hon någonsin behövt och tog även med mina vänner, som var andra utbytesstudenter, på evenemang. Hon är en stor tillgång för detta projekt. Sen vill jag tacka Åke Nilsson för allt han gjorde för mig under hela utbytet. Jag kände mig otroligt trygg från dag ett tack vare dessa fina människor.”

Conclusions on the Student Exchange Program

It is no exaggeration to say that this part of the L-P Foundation funded Exchange program between Department of Chemistry, UWI, and the Department of Chemistry, University of Gothenburg, has been extremely successful on all the levels we defined from the beginning in our local goals based on the L-P Foundation's objectives. All statistical data and all additional interviews with the exchange students largely support this finding.

Analysis of the goal achievement of the teacher exchange program

Our analysis of the teacher Exchange program is based on interviews with and reports from all the participating teachers. However, no written reports were filed from the exchange academic year 2006/2007, but it has been compensated with more extensive interview questions instead. During the visit to Mona Campus in April 2013 we have worked through a personal interview schedule that Dr. Novelette McKnight put together very creditably and who gave us plenty of time for various discussions, both on the international experience and on the experience of teaching and educational organization. The following review and summary is based on our local goals and their numbers and it follows this list of description

in Appendix 2 fairly well. Please look up Appendix 2 for the appropriate objective phrases since normally only their serial numbers are given in the text.

Goal 1. The international and global perspective (including objectives 1.1-1.3)

The interviews with the Jamaican exchange teachers begun at the following starting point: They receive the students' questionnaire first seven questions dealing with globalization and internationalization to comment and then give a numerical value corresponding to the goal achievement of each question on the 5-degree scale. It was interesting to note that also the teachers joined the exchange students' perception of the international experience. All teachers made the remark that, like the students, it was hard to think of anything negative to say regarding the program's international experience. Professor Roy Porter writes in his report the following excerpt that shows some of his surprising discoveries obtained from the Exchange program.

"This was one of the most socially & culturally enlightening trips I have ever been on. I was surprised that almost everyone could speak English and was so welcoming and helpful whenever help was needed. I was also pleasantly surprised to see how modern the city was and that the style of dressing was quite typical of western attire."

Also the Swedish exchange teachers were generally very positive about their international experience and, in addition, positive for their experience to teach at the Mona Campus at UWI and for the possibilities to participate in various collegial discussions. Clearly, Jamaica also offers to the Linnaeus teachers its own particular culture. Jamaica offers as well its usually hot climate and for some Linnaeus teachers also its ferocious mosquitoes. The following quote comes from Professor Per-Ola Norrby written when the memories of the mosquitoes were at its worst:

"Ett stort problem för mig var att den gästlägenhet jag fick tillgång till var undermålig, utan luftkonditionering och i ett mycket myggrikt område, med följderna att jag sov mycket dåligt under hela vistelsen. Jag klarade av att fullgöra min undervisning, men hade inte vare sig tid eller kraft att ta kontakt med forskarna på plats."

However, Per-Ola concluded his summary with the words:

"Trots problemen tycker jag upplevelsen var värdefull."

We can therefore conclude that our goal number 1, with intermediate objectives 1.1-1.3 have high effectiveness and goal achievement for the teaching categories.

Goal 2. The goal for collaboration between the two parties (including objectives 2.1-2.3)

An important aspect of teacher Exchange program is the ability to create a joint network such as it is defined and expressed in the intermediate objective 2.1. During the five academic years, various partnerships between teachers have emerged and developed. We can find support for that remark from several reports and here are a few quotes presented. Again Professor Per-Ola Norrby notes:

"Det krävdes en del anpassning till de datorsystem som fanns tillgängliga för övningarna, men till slut lyckades det väl, enbart tack vara mycket värdefull hjälp från en person i lärarstaben, Robert Lancashire. Under dessa förberedelser fick vi också viss tid att diskutera hans forskning."

This computer program was later adapted for the system at one of the more advanced courses on Jamaica and the Palme teachers professors Paul Maragh and Roy Porter followed up the teaching principles when visiting Department of Chemistry, University of Gothenburg. They also took part in two different courses where they contributed to the content. They also initiated more contact areas during their visit at the Department of Chemistry, GU, in accordance with the objective 2.2. Professor Paul Maragh notes in its report:

"I was re-acquainted with Professor Per-Ola Norrby, who I had met in Jamaica. One of my interests is in Computational Chemistry (Molecular Modelling) and I was given the opportunity to take part in the delivery of his first course for Master students. This has become the base for introducing the course in Computational Chemistry at the Department of Chemistry at the University of the West Indies (Mona), which is currently undergoing curriculum reform. We have now included aspects of Modeling as a part of one of the new advanced courses in Physical Chemistry, where some of the theory will be covered in lectures and Modeling will be undertaken in an associated laboratory course."

From very interesting discussions with the Head of the Chemistry Department, professor Helen Jacobs, we can conclude that the field of theoretical calculations (specifically Molecular Modeling) was high on her priority list for future scientific efforts as well as implementations of course modules. In that respect a new position at the Chemistry Department at UWI directed towards Molecular Modeling was imperative and professor Jacobs mentioned that an application for financial aid has been filed to the Faculty administration. The L-P Exchange program has evidently been a very significant parameter for this development in the lines of theoretical calculations.

The objective 2.3 deals with collaboration concerning examination procedures and pedagogics. In the frame of this objective we have had quite a few joint discussions on how

to further develop particularly examination methods but also course pedagogics. Professor Leif Andersson writes in his report:

"Förutom mer fokuserad undervisning inom analytisk kemi hade jag ett flertal möten med lärarna inom kemiinstitutionen för att diskutera mer strategiska principer vid upplägget av undervisningen. Detta omfattade bl.a. frågan om fördelar/nackdelar med parallell läsning av flera kurser med stora block av laborativ verksamhet."

Dr. Åke Nilsson has also participated in faculty meetings at Campus Mona in which these issues have been thoroughly examined and he has later communicated their common views on the two educational systems in a separate report, which also include a review of the laboratory curricula in different organic courses.

Professor Tony Greenaway indicates in his report that one of the main objectives of his stay at the Department of Chemistry, GU, where in addition to teaching, to have extensive discussions with teachers about the content in various courses. Another aim was to in addition have informal discussions with the Directors of Studies as well as with the Vice-Dean of the organization of education, examination and education. He writes, among other things the following based on his stay at Department of Chemistry, GU:

"My review of the UofG Chemistry courses and programmes and subsequent discussions with academic staff, particularly one of their directors of undergraduate studies, Lennart Sjölin, but also Leif Anderson and Stefan Hulth (Marine and Analytical Chemistry), Johan Boman (Atmospheric Chemistry) and Åke Nilsson (Emeritus organic Chemistry), gave me insight into the structure and contents of the UofG undergraduate and master programmes."

The support for objective 2.3 is clearly shown from another excerpt from Professor Tony Greenaway's report:

"The modular (sequential) nature of courses with examinations at the end of each module at U of G versus the UWI, Chemistry approach of running courses in parallel with exams at the end of each semester. Our discussions agreed that preferences for one approach over the other were mainly subjective and that the primary factor determining the quality of courses was the quality of the teaching. U of G have examination resits for students who initially fail courses, a concept UWI should consider to facilitate student throughput."

However, the Palme students all favored our blocked system over a parallel one as implemented at UWI, which is an interesting observation.

Peer-Led Team Learning (PLTL) has been successfully implemented in the first year chemistry courses at the UWI in an attempt to enhance students learning experiences and performances in chemistry. This workshop model is similar to a system known as Supplemental Instruction (SI), which originated in Uppsala, Sweden and it was used successfully for some time in one course at Department of Chemistry, GU. Dr. Novelette

McKnight is strongly supportive of this instructional approach and she will give some seminars on PLTL during her next visit at the Department of Chemistry, GU, in early June 2013.

It means that we believe that our objectives 2.2-2.3 within the main goal number 2 have great effectiveness and goal achievement in the Exchange program.

Goal 3 has previously been treated separately for the exchange students

Goal 4. The goal for the teacher exchange sub-program (including objectives 4.1-4.2)

In the objective 4.1 we proposed to jointly develop courses and curricula through the establishment of a bilateral team, which would regularly meet preferably by the use of video conferencing technology. Such an organization would have ample opportunities to really influence the content and directions of courses and curricula at the two Departments. One possibility in the new highly developed world of information technology would contain a creation of virtual courses, in which pre-recorded seminars, lectures and laboratory experiments would be available. Unfortunately, we have not yet launched such an organization within his LP- program.

However, the objective 4.2 is highly satisfied in this Exchange program. One of the strongest areas that emerged from the Exchange program is "blue chemistry", or phrased differently as "cutting edge environmental chemistry". Both students and teachers have been very active in this area and particularly it is worth mentioning two Palme students who worked with Jamaica's bauxite mining problems at the Department of Chemistry, GU. At the end of their stay they, as a consequence, presented two Bachelor degree Theses based on analyses of raw data at the atmospheric science group and, in addition, analyses of their own samples from bauxite mining in Jamaica.

The Linnaeus teacher professor Johan Boman who is one of the group leaders and the new Director of Studies at the Chemistry Department, GU, gave lectures in Chemistry courses at UWI when he participated in the Exchange program. He was also involved in the formulation and organization of a network of scientists, a network that have high possibility to be shaped into a common scientific platform in a relatively close future. The Head of the Department of Chemistry, UWI, has also noted the need for reinforcement of personnel in this field and subsequently applied for financial support from the Faculty along these lines as well, then targeted at environmental Chemistry. Professor Johan Boman writes in his report as follows

about his discussions at Campus Mona on, among other things, future sustainable development required both in Sweden and in Jamaica:

"Med Dr Greenaway fördes vid flera tillfällen diskussioner om möjligheter och barriärer för att bättre integrera hållbar utveckling i undervisningen. Kontakter knöts med Göteborgs Miljövetenskapliga Centrum (GMV), som har jobbat med denna fråga under flera decennier. Diskussionerna har fortsatt på en mindre intensiv nivå efter hemkomsten till Göteborg.

Till UWI medfördes även utrustning för att kunna samla in atmosfäriska partiklar mindre än 2,5 µm i aerodynamisk diameter (PM_{2.5}). Tanken är att utrustningen kan användas av antingen en grupp studenter eller en Mastersstudent för ett Masters-projekt. Fördelen med denna utrustning är jag använder den tillsammans med Mastersstudenter på andra platser i världen och nya studenter kan därför jämföra partikelföroreningsnivåerna på andra ställen i världen vilket ger ett mervärde till de lokala mätningarna."

We believe that our main goal number 4 with objective 4.2 has been thoroughly met with high effectiveness and goal achievement and that this area continuously has a potentially interesting future.

Goal 5. The scientific, academic goals (including objectives 5.1-5.4)

As mentioned in previous reports to the L-P Foundation, it is mainly in the fields of organic chemistry/molecular modeling, environmental/atmospheric chemistry and X-ray crystallography that the academic results have been impressive. The contacts that were found between teachers already during the academic year 2007/2008 have been perpetuated and amplified both in terms of research as well as teaching at both Departments. Some specific joint publications that either been published in International journals or are about to be published are given here:

1. Russel, F. A.; Mulabagal, V.; Thompson, D. R.; Singh-Wilmot, M. A.; Reynolds, W. F.; Nair, M. G.; Langer, V. and Reese, P.B: *Stemodin derived analogues with lipid peroxidation, cyclooxygenase enzymes and human tumour cell proliferation inhibitory activities*. **Phytochemistry**, **72** (2009) pp. 2361-2368.
2. Padmanabhan M.; Joseph J. C.; Olsson S. and Bakir M.: *catena-Poly[[[aqua(propane-1,3-diamine-kappa N-2,N ')copper(II)]-mu-fumarato-kappa O-2 : O '] monohydrate]*. **Acta Crystallographica** Section E-Structure Reports Online, **64** (2008) pp. M303-U350.

- Henderson J.; Kahwa, I.; Håkansson, M.; Björemar, P. M. and Sjölin, L. *The synthesis and characterization of lanthanide (III) complexes of 1-aziridine ethanol*. (2012) In manuscript.

The latter article is based on a study carried out by the Palme student Janese Henderson who worked at GU on a large number of lanthanoid complexes. She synthesized them and they were then subjected to structure studies by using XRD. One of the complexes has also been solved with X-ray crystallography to atomic resolution. The study is published in parts as a Bachelor exam Thesis at the Department of Chemistry, GU. The cooperation on this project includes Lennart Sjölin, Mikael Håkanson, Marvadeen Singh-Wilmot and Ishenkumba Kahwa.

Furthermore, we have previously presented in this evaluation report the interest accumulated on Molecular Modeling, primarily within organic chemistry, by the network of professors Per-Ola Norrby, Åke Nilsson, Paul Maragh and Roy Porter. We have also more extensively discussed the plausible cooperation in the future based on environment/atmosphere/marine chemistry in a scientific team with the professors Tony Greenaway, Leif Andersson and Johan Boman as contributors and organizers. One can also discern a more extensive common study directed towards the field of rare-earth metals. The scientific investigations based on lanthanoids have an industrial impact and Solid State Chemistry has thus become a hot area in Jamaica due to the increasing needs and requirements from the electronics industry.

It means that we believe that our main objective 5.1 within goal number 5 has a very great effectiveness and goal achievement in the Exchange program and a potentially interesting future awaits here.

One of the more important single elements as an outcome from the Exchange program deals with outreach, the possibilities to extend the ideas behind the L-P program to a wider audience with a wider focus. In our case the aim was to implement the program construction on the Faculty and University level. As a consequence of the success of the L-P program for exchange between the two Chemistry Departments a Memorandum of understanding (MoU) has been agreed upon and subsequently signed by the Vice Chancellor of the University of West Indies as well as the Dean of the Faculty of Science at the University of Gothenburg. A copy of the signed memorandum MoU is enclosed as Appendix 7 in this report. As been argued in the previous paragraph there is also increasing interest from an industrial point of view in Jamaica. Although the impact of the Exchange program has not been that extensive on the Swedish side we still believe that a full availability to the tropical region's marine and botanical regions would create an increased interest in our scientific community sooner or later.

This means that the main objective 5.3 within goal number 5 is fully satisfied and our achievements so far might be a cornerstone of a future cooperation when the L-P Foundation's support has ended.

Goal 6. Goals for extended pedagogical exchange (*including objectives 6.1-6.2*)

During one of his journeys to Campus Mona, UWI, Dr. Åke Nilsson investigated in collaboration with Dr. Novelette McKnight the organization, functionality and outcome of particularly the organic laboratory courses and compiled a short report (previously reported to L-P program) where a relatively extensive comparison between the two Departments were undertaken concerning selected laboratory experiments, laboratory sample descriptions and theoretical developments. This analysis has been of great use to adequately assess the different course levels in relation to each other and thus given us an instrument to assess the comparability between the different curricula.

The examination format that has been specifically discussed between several teachers (Anthony Greenaway, Robert Lancashire, Novelette McKnight, Åke Nilsson, Leif Andersson and Lennart Sjölin) is an examination based on the seminar. In many humanities courses the seminar is the dominant form of examination but examinations based on seminar are rare in the science disciplines. We estimate that these discussions have been to the benefit of both parties and look forward to an in-depth analysis in the next Exchange period.

It means that we believe that our objectives 6.1 and 6.2 in main goal 6 have great effectiveness and goal achievement.

Overall conclusion about the objectives for the Exchange program

The overall conclusion that all involved in the project (students, teachers, administrators and management teams) has expressed is that the Exchange program has been very successful so far. In addition, it is considered that the international, the global and the cultural perspectives have been particularly important for all participants. This is evident from, for example, the analyses of the answers in the student questionnaires. Also for the academic goals that we locally defined the achievement is high to very high for all Exchange students and teachers as a general estimate. This is also reflected with great clarity from the analyses we made based on questionnaires, reports and interviews. We therefore believe that the Exchange program has had a very high goal achievement and subsequently has contributed to an international understanding of different cultures as well as to an academic collaboration.

As a final example, we can now borrow Robert Lancashire's statement in his report from his stay as a Palme teacher where he writes about the Exchange program's academic impacts as follows:

"Clearly the linkage between the Universities has been most beneficial over the past few years, not just for the staff exchanges but for the student exchanges as well. The students have gained a broader appreciation of how chemistry in a developed country is being pursued and have gained valuable experience in their course projects with access to equipment and facilities not available at UWI."

An Alchemical Lab



The future - financial year 7 and beyond

At the Mona Campus Dr. Novelette McKnight has served as project coordinator, in full collaboration with Dr. Åke Nilsson, who has been the project coordinator at the Department of Chemistry, GU. There have been a number of joint discussions between them through the five years on how the program has worked in both past and in present time. We all have also jointly discussed which areas we will focus on during the financial year 7 (recently granted) in order to create the optimum conditions for a continued cooperation as L-P Foundation's contribution to the projects will come to an end. Both parties are interested in a continued collaboration but then supported by financial aid from other funds with the written MoU (Memorandum of Understanding) as the base for Joint Scientific/Academic Proposals which will then be sought in various, possible funds. The future will tell how this will be organized.

Conclusion

We conclude our report by citing the joint statement the Dean, Ishenkumba Kahwa, and the Registrar, Camille Bell-Hutchinson, declared in our final meeting of the evaluation journey at UWI in April 2013:

"The current L-P program for exchange of teachers and students between our two Departments is for us at UWI a template program because of its impact, organization and transparency. Teachers and students attend courses at the receiving Department with a simplicity that is unique compared to other international programs which we are involved in."



Together for a brighter future - a monumental art work at UWI

Appendix 1

Table 1. A list of the Swedish exchange students (Linnaeus)

Name	Exchange student year	Activities 2013
Elin Johansson	2010	PhD Student
Johan Dunevall	2010	Master Student
Martina Furåsen	2010	Work in manufacturing industry
Erik Lindstedt	2010	PhD Student
Carl Johan Nolmark	2011	Master Student
Jens Andersson	2011	Master Student
Ivana Uzelac	2011	PhD Student
Jannie Staffanson	2012	Master Student

Table 2. A list of the Jamaican exchange students (Palme)

Name	Exchange student year	Activities 2013
Rochette Sinclair	2010	PhD Student, Ontario, Canada
Jevon Samuels	2010	Medical School UWI
Nijole Young	2011	PhD Student
Jheanell James	2011	PhD Student
Keisean Stevensen	2012	Master Student, Alberta, Canada
Janese Henderson	2012	PhD Student in transfer

Table 3. A list of the Swedish exchange teachers (Linnaeus)

Name	Exchange teachers year
Åke Nilsson	2007
Lennart Sjölin	2007
Åke Nilsson	2010
Per-Ola Norrby	2011
Leif Andersson	2011
Johan Boman	2012

Table 4. A list of the Jamaican exchange teachers (Palme)

Name	Exchange teachers year
Novelette McKnight	2007
Winklet Gallimore	2007
Robert Lancashire	2011
Tony Greenaway	2011
Roy Porter	2012
Paul Maragh	2012

In addition:

Dr. Marcia Rainford, Department of pedagogy, UWI, visited University of Gothenburg 2007 on her own expense in connection to another teacher exchange that year.

Dr. Åke Nilsson did an extra planning trip in the spring 2009, on his own expense.

Dr. Marvadeen Singh-Wilmot, Department of Chemistry, UWI, visited University of Gothenburg during spring 2009 to learn more about a research method as a result of the lectures at UWI by Prof. Lennart Sjölin in 2007.

Appendix 2

The Linnaeus-Palme Program – a declaration from the program office

Linnaeus-Palme is a program for teaching staff and students at university first-cycle (undergraduate) and second-cycle (graduate) level. It shall stimulate long-term collaborations based on the mutual benefit created between higher education institutions in Sweden and developing countries. These collaborations are conducted in project form and build upon teacher and student exchanges.

Below we give a concise description of the aims we have identified in the program texts. After this section follows our own aims with the exchange program, based on the aims identified below.

The Linnaeus-Palme Program – aims

a) The education

The aim of the Linnaeus-Palme program is to raise the quality of higher education by integrating global perspectives into the learning process. In this way, Sweden and its collaborative partners gets prepared to face global challenges.

b) The individual level

The aim on an individual level is that teachers and students participating in the exchange should gain increased competence in global issues and an enlarged contact network.

c) The departmental level

The aim on a departmental level is that global perspectives can be integrated into teaching and as such will also benefit those who have not taken part in an exchange.

d) The international experience

The aim is that students who participate in exchanges should be better prepared for work in a global context. Teachers who participate in exchanges are expected to use and spread both their own global knowledge as well as that of their students, inside and outside of the classroom. Overall this will lead to international experiences being utilized in operation within the departments.

e) The participation on equal terms

Each project is assumed to have specific academic aims for their collaboration. Mutuality is central to the Linnaeus-Palme program. Partners should be able to participate in equal collaboration that leads to mutual benefits, even if the resources may be very different.

f) Strategy for Capacity Development and Collaboration document

The aim is that the program, financed by Sida, the Swedish international development cooperation agency, contributes to the fulfillment of the goals set in the Strategy for Capacity Development and Collaboration, through providing good competence and capacity both with Swedish participants and participants from developing countries.

g) The long term goal of sustainability

A more long-term aim is to contribute to the goal of sustainable reduction of poverty. An important part of this project is to stimulate Swedish higher education institutes into increasing their internationalization; through contributions to strengthen relations with countries outside Europe and North America.

The Linnaeus-Palme Program – Our aims

To clarify our work with the Linnaeus-Palme Program we have formulated our own aims for the collaboration within the exchange program during the reporting period 2006/2007 – 2011/2012. The account builds on our interpretation of the program aims as expressed above. These aims are divided into two major parts:

1. the international and the global perspective
2. the individual scholastic perspective.

In the following sub-sections our aims are described and further separated in more specific parts based on these two perspectives.

1. The international and global perspective

In this perspective we are hoping that the exchange will provide students and faculty with opportunities to experience diverse racial, ethnic and cultural situations in Sweden and Jamaica and surrounding countries thereby enabled them to develop a network of friends, colleagues that will ultimately result in the establishment of personal and faculty connections between countries and cultures.

1.1 The international perspective

The international perspective is very important for particularly students to enable them envisioning their own reality in a global context. This perspective is also important in order to understand and be aware of the creation of international solidarity. Further, it is a goal in itself that this perspective may compel the participants to prepare their minds for a society with frequent contacts over the cultural borders as well as over the nations' borders.

We further believe that the exchange program will allow the students:

- To gain insight into the historical and cultural makeup of different regions. To improve communication skills with individuals from diverse backgrounds, and to eliminate racial and ethnic stereotypes.
- To develop self-awareness and understanding of the world and international relations, leading to a much more international, focused and determined approach upon return to the home department.

1.2 The global distribution of funds and resources

The cultural geographic focus provides knowledge about the area distribution of developing resources and funds in different perspectives like globally, nationally and locally. The analysis of the different situations must be centered on how global developing trends affect nations and local places as well as how global developing trends affect the resource distribution between high and low income countries.

The exchange program may provide an opportunity for the students to analyze, plan and gather knowledge and advices concerning business, developing trends as well as operational, institutional, and range of project challenges.

Investing time in the study of global resources can provide diversification and exposure to the same themes and growth potential as emerging markets, but often with the benefits of the governance frameworks of developed economies and day-to-day life.

1.3 The sociocultural exchange

It is our aim that the exchange student will adapt to and get immersed into a new culture and work through the associated challenges that this may entail. It will allow for the exploration of differences between countries, understanding traditions and taboos and the tolerance for others. We believe that the students will enhance the understanding of people with different religion, traditions and opinions, which will be beneficial for a multi-cultural collaboration. These are vital goals in this respect.

2. The goal for collaboration between the two parties

2.1 Collaboration fostered within the teacher and student exchange program

The most important long time goal concerning the collaboration within the teacher and student exchange program is to keep, develop and extend the current exchange forms and procedures, which until now have proven themselves to be sustainable. We believe that these factors have been imperative and will so be in the future to come and certainly beyond the end of the LP program support. We judge the collaboration on the person-to-person level to be of outmost importance and it proves itself to be the base for a fruitful continuation.

2.2 Collaboration concerning education and research

The goal for the collaboration part of the program is to expand/broaden and strengthen the relationship between the UWI-Mona and GU Departments of Chemistry in order to promote mutually beneficial research and training opportunities for faculty staff and students at the undergraduate and graduate levels.

2.3 Collaboration concerning examination procedures and pedagogics

The goals and our effort concerning examination procedures and pedagogics are further explained in section 6 but they can be summarized in the following statements:

- Mutual effort to analyze and improve on the examination process.
- Development of pedagogical and didactic integration of different aspects of science.
- Development of Peer-Led Team Learning (PLTL).

3. The goals for the international exchange of students

3.1 The global perspective in the student exchange sub-program

The program and its activities should:

- Increase the students' knowledge about and interest in business or political development.
- Encourage the student's development of an international perspective on current issues.
- Develop the students into future leaders with greater appreciation and tolerance of cultural diversities, who are better prepared to work and live in culturally diverse societies.
- Develop a network of friends and colleagues among the students that will ultimately result in the establishment of connections between countries and cultures.

3.2 The higher degree of independence and increased self-awareness

It is imperative that the student:

- Develop independence since the student will be leaving the comforts/privileges of parental/family support to venture on their own in a more unfamiliar environment. In this way they can develop great responsibility, initiative, accountability, maturity, confidence as well as discover their abilities and limitations.
- Develop self-awareness and understanding of the world and international relations.

3.3 The student in a research environment

Our goal is that that the student in the exchange program will reach an extended research related matureness by:

- Developing cognitive and emotional skills.
- Cultivating a vibrant research insight in the participating institutions in areas of concern to the subject and to the global community.

4. The goal for the teacher exchange sub-program

4.1 Development of courses and curricula

We anticipate collaborative development of interdisciplinary international teams to improve chemistry education at our respective institutions.

4.2 Scientific networks and common scientific platforms

The aim is to establish a pipeline of talent flow from UWI-Mona into programs at GU and vice versa. This would be of mutual benefit as the products of this flow would be next-generation experts with unique skills to serve the global community in cutting-edge science and with the ability to address critical issues in the environment, natural products, health, medicine and nanotechnology.

5. The scientific, academic goals

5.1 Common research projects

- Provide professional development opportunities for faculty and postdoctoral fellows to start and implement common research projects.
- Enable the development of joint competitive interdisciplinary research proposals.

5.2 Common educational projects

Green chemistry is the design of chemical products and processes that reduce or eliminate the use of generations of hazardous substances. Our aim is to achieve

- Develop new experiments that illustrate green chemistry concepts and are effective in teaching labs
- Provide flexible and sustainable ways of integrating green chemistry into the existing curricular framework.

5.3 Formalization of faculty cooperation (MoU)

A Memorandum of Understanding should be signed between the Science faculties at both universities and include

- Area of cooperation including, subject to mutual consent, any activity or program at either department as considered desirable and feasible on either side to foster and develop the cooperative relationship between the two faculties.
- The assistance by each of the contracting parties to include teaching, research, exchange of faculty and students, staff development, etc., as deemed beneficial by the two faculties.

5.4 Development of IT and the implementation of social media

Another long term goal in concerns the collaboration in development and utilization of information technology as well as social media. A continued student exchange program can in a near future benefit from inclusion of social media e.g. Facebook and Twitter as well as LinkedIn.

6. Goals for extended pedagogical exchange

6.1 Examination principles and examination systems

The ongoing restructuring of university education have prompted a drive from teacher centered to more student centered and active learning strategies and course design. Among these strategies, are peer-teaching, problem and inquiry based learning and case based learning. In the sciences, inquiry-based learning has been widely promoted to increase literacy and skill development and problem solving capabilities. Peer-Led Team Learning (PLTL) is an innovative teaching method which incorporates active and cooperative learning strategies. It involves the placement of students into small groups under the guidance of a Peer Leader who is a student that has been very successful in the course in the previous year. We address the common goal devoted to the study of innovative examination principles.

6.2 Pedagogic and didactic principles specific for chemistry

The pedagogic and didactic principles were selected to be concerned the formulation and teaching principles in relation to laboratory practicals. Particularly analyses of common descriptions and routines are of interest for the two parties.

Appendix 3

Enkäten som de svenska utbytesstudenterna besvarat

Enkätfrågor

1. Vilken kategori tillhör du? Sätt ett kryss X i rätt ruta.

Lärare	Student	Ledningsgrupp	Administratör	Annan kategori

Här följer ett antal enkätfrågor som baseras på några av de 6 mål med delmål som är definierade för LP- utbytet med UWI och som vi ställt samman för vår interna analys av utbytesprogrammet. Samtliga frågor besvaras på en 5-gradig skala. Vänligen sätt ett kryss i lämplig ruta.

A. Det globala målet (det globala perspektivet)

2. Hur uppfattar du att utbytesprogrammet har ökat ditt internationella perspektiv?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

3. Hur uppfattar du att utbytesprogrammet har ökat ditt kulturella perspektiv?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

4. I vilken utsträckning har programmet gett dig insikt i fördelningen av globala utvecklingsresurser?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

5. I vilken utsträckning har du fått insikt om landets traditioner och tabun?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

6. Har programmet gett dig fördjupad insikt om bakgrunder för etniska stereotyper?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

7. I vilken utsträckning har programmet gett dig insikt i politiken runt internationella relationer?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

B. Vidare om dig som student

Hur många timmar per vecka ägnade du i genomsnitt åt studier vid UWI:.....

1. I vilken utsträckning utvecklade studierna din förmåga vid UWI att lösa problem (sätt ett kryss X i rätt ruta)

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

2. Att tänka kreativt

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

3. Att göra skriftliga presentationer

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

4. Att göra muntliga presentationer

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

5. Att analysera problem

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

6. Att söka och värdera information

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

7. Hur påverkade studierna vid UWI din kreativitet

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

8. Påverkade utbytet med UWI grunden för din kommande yrkesverksamhet

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

9. Tror du att din kompetens kommer att vara efterfrågad på arbetsmarknaden efter LP-utbytet?

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

Här följer några frågor om dina studier vid UWI.

10. Blev du väl mottagen på kursen/kurserna

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

11. Var undervisningen välorganiserad

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

12. Var lärarna kunniga i sitt ämne

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

13. Var lärarna pedagogiska

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

14. Var lärarna väl förberedda

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

15. Var undervisningen stimulerande

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

16. Var lärarna intresserade av dig

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

17. Hur var tillgången på undervisningslokaler

Mycket stor	Stor	Lagom	Mindre	Ringa

18. Utformningen av undervisningslokaler

Mycket bra	Bra	Lagom	Mindre bra	Ringa

19. Utrustningen i undervisningslokalerna

Mycket bra	Bra	Lagom	Mindre bra	Ringa

20. Tillgången på studieplatser

Mycket bra	Bra	Lagom	Mindre bra	Ringa

21. Bemötandet av institutionen

Mycket bra	Bra	Lagom	Mindre bra	Ringa

22. Tillgången på studentstöd

Mycket bra	Bra	Lagom	Mindre bra	Ringa

23. Tillgång till caféer och restauranger inom området

Mycket bra	Bra	Lagom	Mindre bra	Ringa

24. Hur var studiernas svårighetsgrad

Mycket svår	Svår	Lagom	Mindre svår	Ringa

25. Arbetsbelastningen

Mycket stor	Stor	Lagom	Mindre	Ringa

26. Mina kurskamrater ställde upp för mig och hjälpte mig vid behov

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

27. Jag kom bra överens med lärare

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

28. Jag trivdes bra med mina kurskamrater

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

29. Det var svårt att få nya vänner på min kurs

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

30. Det var svårt att vara avspänd i miljön

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

31. Diskussionerna i min studentgrupp var positiva och utvecklande

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

32. Jag kände mig ofta utanför

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

33. Jag blev stressad över kurskamraternas förväntningar på mig

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

34. Lärarna var tillmötesgående

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

35. Lärarna var stödjande

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

36. Lärarna var tillgängliga

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

37. Lärarna var flexibla

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

38. Annan personal var tillmötesgående

I mycket hög grad	I hög grad	Lagom	I mindre grad	Ringa

Tack för din medverkan!

Appendix 4

Enkäten som de jamaicanska utbytesstudenterna besvarat

Questions related to the LP-exchange program

1. Which category do you belong to? Mark with an X in the appropriate box.

Teacher	Student	Steering committee	Administrator	Other category

To aid us in evaluating the LP exchange program between GU and UWI we have a number of questions that we would like you to answer. They are related to the goals of the exchange program.

Please mark the appropriate box with an **X**.

C. The global perspective

2. To what degree has the exchange program increased your international perspective?

Very high degree	High degree	Medium	Less degree	Not at all

3. To what degree has the exchange program increased your cultural perspective?

Very high degree	High degree	Medium	Less degree	Not at all

4. To what extent has the exchange program increased your knowledge regarding distribution of global developing resources?

Very high degree	High degree	Medium	Less degree	Not at all

5. To what extent has the exchange program promoted insight into different traditions and taboos?

Very high degree	High degree	Medium	Less degree	Not at all

6. To what extent has the exchange program promoted a deeper insight into various backgrounds for ethnic stereotypes?

Very high degree	High degree	Medium	Less degree	Not at all

7. To what extent has the exchange program given you insight into the political life, particularly concerning international relations?

Very high degree	High degree	Medium	Less degree	Not at all

D. Questions regarding your stay at the Chemistry Department in Göteborg

8. To what extent has your studies in Göteborg helped you in developing your problem solving skills?

Very high degree	High degree	Medium	Less degree	Not at all

9. Your creative thinking?

Very high degree	High degree	Medium	Less degree	Not at all

10. Your scientific writing skills?

Very high degree	High degree	Medium	Less degree	Not at all

11. Your oral presentations skills?

Very high degree	High degree	Medium	Less degree	Not at all

12. Your analytical skills?

Very high degree	High degree	Medium	Less degree	Not at all

13. Your ability to retrieve and evaluate necessary information?

Very high degree	High degree	Medium	Less degree	Not at all

14. Do you think that your participation in the LP- program will be beneficial for your future job carrier?

Very high degree	High degree	Medium	Less degree	Not at all

15. Do you think that your competences will be attractive in the labor market after the exchange??

Very high degree	High degree	Medium	Less degree	Not at all

16. Were you well received by the teachers in your chosen courses?

Very high degree	High degree	Medium	Less degree	Not at all

17. Were these classes well organized?

Very high degree	High degree	Medium	Less degree	Not at all

18. Were the teachers knowledgeable in their respective subjects?

Very high degree	High degree	Medium	Less degree	Not at all

19. Were the teachers pedagogically knowledgeable?

Very high degree	High degree	Medium	Less degree	Not at all

20. Were the teachers well prepared for their lectures?

Very high degree	High degree	Medium	Less degree	Not at all

21. Was the teaching in the class room stimulating?

Very high degree	High degree	Medium	Less degree	Not at all

22. Did the teachers show interest in your learning?

Very high degree	High degree	Medium	Less degree	Not at all

23. The availability of appropriate lecture or seminar rooms.

Very good	Good	Medium	Fair	Bad

24. The design of the lecture or seminar rooms.

Very good	Good	Medium	Fair	Bad

25. The quality of the equipment in the seminar rooms and the laboratories.

Very good	Good	Medium	Fair	Bad

26. The availability of study places for individual studies and preparations.

Very good	Good	Medium	Fair	Bad

27. The support by the Department personnel upon your arrival and during your study period.

Very good	Good	Medium	Fair	Bad

28. The availability of student support from different sources.

Very good	Good	Medium	Fair	Bad

29. The availability of restaurants and cafés within the surrounding area.

Very good	Good	Medium	Fair	Bad

30. Difficulty of your selected courses.

Very high degree	High degree	Medium	Less degree	Not at all

31. How was the workload?

Very high	High	Medium	Low	Very low

32. My course mates helped me when so required.

Very high degree	High degree	Medium	Less degree	Not at all

33. I got along well with my teachers.

Very high degree	High degree	Medium	Less degree	Not at all

34. I got along well with my fellow students.

Very high degree	High degree	Medium	Less degree	Not at all

35. It was difficult to obtain friends in the courses.

Very high degree	High degree	Medium	Less degree	Not at all

36. It was difficult to feel relaxed in the class room.

Very high degree	High degree	Medium	Less degree	Not at all

37. The discussions in my student group were conducted in a positive manner.

Very high degree	High degree	Medium	Less degree	Not at all

38. I often felt like being outside of the student group.

Very high degree	High degree	Medium	Less degree	Not at all

39. I became stressed because of various expectations enforced on me.

Very high degree	High degree	Medium	Less degree	Not at all

40. The teachers were supportive and also understanding of my situation.

Very high degree	High degree	Medium	Less degree	Not at all

41. The teachers were flexible in the class room and outside.

Very high degree	High degree	Medium	Less degree	Not at all

42. The teachers were available for discussions.

Very high degree	High degree	Medium	Less degree	Not at all

43. Other personnel categories were also available for me in most cases.

Very high degree	High degree	Medium	Less degree	Not at all

Thank you for your participation!

Appendix 7. Memorandum of Understanding



GÖTEBORG UNIVERSITY

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE UNIVERSITY OF THE WEST INDIES

AND

GÖTEBORG UNIVERSITY, SWEDEN

The University of the West Indies, a regional institution established by Royal Charter with Centre headquarters at Mona, Kingston 7, Jamaica and with Campuses at Cave Hill, Barbados; Mona, Jamaica; St. Augustine, Trinidad and Tobago and **The Faculty of Sciences, Göteborg University, Sweden**, wishing to engage in cooperative programmes of education, research, science and technology and promote exchange among their faculty and students, agree as follows.

1. Area

The area of cooperation includes, subject to mutual consent, any activity or programme at either institution as considered desirable and feasible on either side to foster and develop the cooperative relationship between the two institutions.

The assistance to be provided by each of the contracting parties will include teaching, research, exchange of faculty and students, staff development, etc., as deemed beneficial by the two institutions.

2. Methods

The collaboration shall be carried out, subject to availability of funds and the approval of each institution, through such activities or programmes as:

1. Joint research activities (including exchange of faculty members and research students)
2. Joint teaching or supervision of students
3. Staging of joint seminars, conferences and academic meetings
4. Special academic programmes
5. Exchange or Study Abroad on the part of undergraduate and graduate students, including internships and practicum.
6. Exchange of academic materials and other information.
7. Joint publications, sharing of experience in methodology and academic organization

The terms of such collaboration and the necessary budget for each programme and activity shall be mutually discussed and agreed upon in writing by both parties prior to the initiation of the particular programme or activity, and such programmes and activities shall be negotiated on a mutual basis. Each institution will designate a coordinator to develop and implement specific activities or programmes.

Student exchanges will take place on a reciprocal basis where tuition fees are waived by the host university.

3. Principles

Implementation of this Agreement will be in accordance with the Charter and Regulations of both institutions.

The University of the West Indies and Göteborg University will each accept the participants selected by the other if mutually acceptable academic and / or professional qualifications and standards are met.

Both universities subscribe to the policy of equal opportunity and do not discriminate on the basis of race, sex, age, ethnicity, religion, national origin or physical disability.

All participants will be treated in the same non-discriminatory manner in carrying out the provisions of the agreement, subject to the provisions of the policies and requirements of each of the institutions.

Any violation of these principles will be considered grounds for terminating the agreement.

4. Effective Date and Length of Agreement

This Memorandum of Understanding will remain in force for a period of five years from the date of signing subject to the availability of funds, and any amendment and/or modification of the Memorandum of Understanding will require written approval of the chief administrative officer of each institution and shall be appended hereto. After the initial three year period, this Agreement may be renewed by mutual consent.

Either party reserves the right to terminate this Memorandum of Understanding upon six months' written notice to the other.

This Memorandum of Understanding shall take effect when signed by each side:

For The University of the West Indies

For Göteborg University

Professor E. Nigel Harris
Vice Chancellor

Professor David Turner
Dean, Faculty of Sciences

Date

Date

Professor Pam Fredman
Vice-Chancellor

Date

Appendix 5

Averages of the questionnaire answers by the Linnaeus students of the Exchange program. The average rating is based on a 5-point scale. 1 = low goal agreement, 5 = high goal agreement. For the questions, see appendix 3.

Fråga Nr.	Linnaeus
Q2	3,57
3	3,57
4	3,14
5	4,14
6	3,42
7	3,57
8	3,57
9	3,14
10	3,14
11	4,57
12	3,42
13	4,28
14	4,28
15	4,42
16	3,71
17	4,28
18	3,57
19	2,28
20	1,71
21	3,71
22	5
23	4,14
24	4,71
25	2,85
26	2,71
27	3,42
28	4,42
29	4,28
30	1,57
31	1,71
32	3,42
33	1,42
34	1,74
35	4,28
36	4,28
37	4
38	3,85
39	4,14

Appendix 6

Averages of the questionnaire answers by the Palme students of the Exchange program. The average rating is based on a 5-point scale. 1 = low goal agreement, 5 = high goal agreement.

For the questions, see appendix 4.

Question	Palme
Q2	4,5
3	4,5
4	4
5	4,17
6	4,5
7	4,5
8	4,67
9	4,5
10	5
11	5
12	5
13	4,5
14	5
15	4,5
16	5
17	4,83
18	4,83
19	5
20	4,17
21	4,83
22	4,33
23	4,67
24	3,33
25	3,67
26	4
27	4,83
28	4,67
29	1,33
30	1,33
31	4,67
32	2
33	1,5
34	4,67
35	4,67
36	4,87
37	4,69