Report from a Semester at Amherst College

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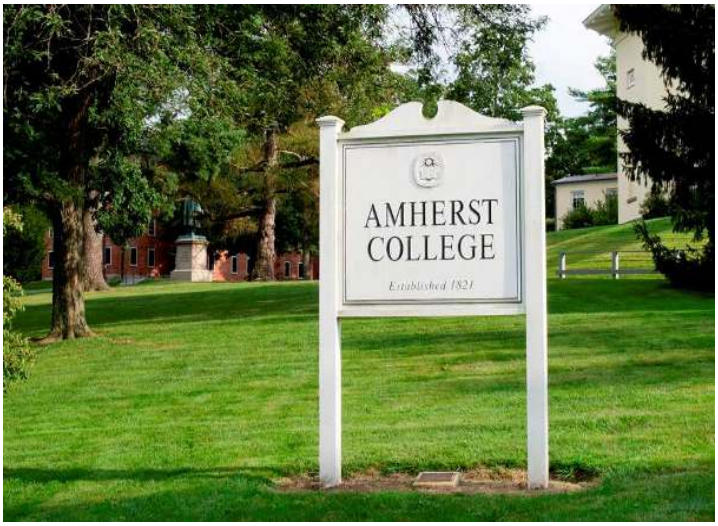
This is my report from a teaching sabbatical semester at Amherst College during the fall 2013, which was made possible through a fellowship within in the Swedish Foundation for International Cooperation in Research and Higher Education (STINT) programme "Excellence in Teaching". At Amherst College I was given the opportunity to teach an upper level course in Chemistry. Amherst College is one of the leading and selective Liberal Arts Colleges in the U.S. A degree from Amherst College is not only prestigious, but also very advantageous for further professional studies or careers. The time at Amherst College has given me a chance to reflect over pedagogy in higher education; for me as a teacher, but also how to stimulate teaching of high quality on an organizational level.



The first part of this report will be an overview of Amherst College (A), where some differences and similarities to my home institution (Faculty of Pharmacy, Uppsala University) will be discussed. Thereafter, my Preparation and Planning (B), Task and Responsibility (C), Activities during the Semester (D), Important Lessons (E), Action Plan (F), Plans to maintain contact and collaboration with Amherst College (G), and finally Acknowledgements (H) will be presented.

(A) **Amherst College,** differences and similarities to Uppsala University

Amherst College is located in the town of Amherst, in Western Massachusetts, in an area called the Pioneer Valley. The Pioneer Valley is known for its beautiful scenery based on hills, farmland, and deciduous forests. The spectacular and colorful autumns attract lots of tourists to the Pioneer Valley, as does Connecticut River, the biggest river in New England. Amherst is a small town with a population of 40,000, which hosts two colleges (Amherst and Hampshire) as well as a University (University of Massachusetts, UMASS). The numerous educational options within the town have a big influence on its atmosphere, so it is not surprising that the town of Amherst is one of the most inclusive and liberal communities within the country. In that way it is very similar to the "academic" Uppsala, although Uppsala is a much bigger.

Amherst College is a residential undergraduate Liberal Arts College based on the foundation that *"education is a process or activity rather than a form of production"*. They strive to educate men and woman of exceptional potential within the liberal arts. Thus, **diversity within the course curriculum** as well as within the student body is absolutely crucial to Amherst College. Amherst College and its arch rival Williams Colleges are continuously ranked as the premier Liberal Arts Colleges within the U.S., and so it is very difficult to be admitted by the College. About one of ten students applying is admitted, and the selection is based on academic records (most important), recommendation letters, but also for example accomplishments within sports, politics and art. This is very different to the situation at my home institution in Uppsala where the selection is close to one admitted student of two applying to "Apotekarprogrammet" and even less for "Receptarieprogrammet".

The College was founded in 1821 as a nonsectarian institution which adopted the motto *Terras Irradient* ("Let them enlighten the lands"). The mission for Amherst College is very much the same now as it was from

the start, with the major difference that it is now coeducational. The revised mission of Amherst College now reads:

"Amherst College educates men and women of exceptional potential from all backgrounds so that they may seek, value, and advance knowledge, engage the world around them, and lead principled lives of consequence.

Amherst brings together the most promising students, whatever their financial need, in order to promote diversity of experience and ideas within a purposefully small residential community. Working with faculty, staff, and administrators dedicated to intellectual freedom and the highest standards of instruction in the liberal arts, Amherst undergraduates assume substantial responsibility for undertaking inquiry and for shaping their education within and beyond the curriculum.

Amherst College is committed to learning through close colloquy and to expanding the realm of knowledge through scholarly research and artistic creation at the highest level. Its graduates link learning with leadership—in service to the College, to their communities, and to the world beyond. (Voted by the Board of Trustees and the Faculty, May 2007)"

Thus, from the beginning Amherst College welcomed talented students from all backgrounds and especially those who might not usually have access to higher education. As a contradiction to the mission of Amherst, but perhaps not to the society in general, it took Amherst more than hundred years to admit the first woman – Amherst became coeducational in 1975. The current president Bidde Martin is the first woman on this position, which is considered another milestone in Amherst's increasing diversity and gender equality. Today, Amherst College enrolls students from nearly every state in the country and from more than 40 countries. More than 35 percent of Amherst's students are so called "students of colors". Amherst enrolls in total 1,800 students and has a notable student-to-faculty ratio of 8 to 1. The average class size is 16 students. This allows students to interact closely with professors during courses (*Amherst students greet all their teachers (assistant to full professors) by the title "professor").* The size of Amherst College – looking at the number of students — is closer to the Faculty of Pharmacy, which has ca. 1200 students, as compared to Uppsala University, having more than 40, 000 students. Though, the student-to-faculty ratio is higher in Uppsala.

The comprehensive fee for the students at Amherst College per year is $55,510. However, more than 60% of the student body gets financial scholarship aid (Federal Pell Grants as well as Amherst College need-based grants). Amherst is a **private institution** which is reliant upon **alumni donations**. More than 60% of Amherst's alumni (>20,000) donate to Amherst each year, which is one of the highest participation rates in the country. The organization around alumni at Amherst is immense and very important for the students when it comes to networking and career planning. Amherst is very proud over its many successful alumni, which includes Nobel laureates, several Pulitzer Prize winners, and a U.S. president. Overall, Amherst has an impressive endowment of more than $1.6 billion.

When the students as freshmen arrive to campus they enter into a **ten days orientation** program. The main purposes of the orientation are to welcome the students and to **"build community"**. During the orientation the new students get engaged in a myriad of programs and events. Amherst College educates the students in community values, intellectual integrity, respect, and establish norms for ethical conduct. Since Amherst is a residential college, where almost every student lives within the campus, the orientation gives an essential introduction to dorm life. After a well-published incident in recent time Amherst College has taken a leading position to promote sexual respect within the student body and to circumvent sexual assault and violence. For example, Amherst has a Sexual Respect Educator serving as deputy Title IX Coordinator for students, who is responsible for coordinating educational programs for student and faculty, e.g. during the orientation. Under the orientation students could also be sent out to work with service organizations, to go hiking, to see shows, or to meet with the president. The students can also choose to visit departments and to meet with faculty, which also include trying out the myriad of cultural option (e.g. within music, art, dancing, and religions) at Amherst or different sports. Sports —american football, baseball, field hockey, swimming, lacrosse etc.— is very important at the College in general. One of the

earliest reflections I made at Amherst College was that the majority of students I saw at campus where wearing their sports outfit, and often with the Amherst logo.

To guide the students within liberal arts studies at an individual basis every student will be given an **Academic Advisor** (always a Faculty member, e.g. Assistant, Associate or full Professors). The students meet with their advisor for the first time under the orientation period. This is the start of their many "close contacts" with professors. The advisor and student will discuss about the student´s goals for learning, their weaknesses and strengths, and to think wide in a liberal art context. Finally, they agree over course selections for the first semester. Students will meet with their advisors at least once per semester prior to pre-registration periods. The students can choose from 800 different courses at Amherst College and finally graduate with a Bachelor of Arts degree in one or more of 37 different fields of study, within arts, sciences, social sciences and humanities. Furthermore, Amherst is part of the Five College Consortium, consisting of Hampshire, Holyoke, Smith, and Amherst Colleges, as well as UMASS; which increases the courses available for the students. Even if liberal arts studies encourage a diverse selection of courses, with no acknowledge of pre-professionalism, the students eventually have to declare a major, which is a field of concentration. This should be done no later than at the end of the sophomore year (i.e. the second year), when they also will be given a new advisor within the field of concentration. A limitation in the diverse course selections is that several courses are prerequisite courses for certain graduate studies (after they leave Amherst College). A big portion of the Amherst graduates are so called "PreMeds", who aim at admission to medical schools after graduating from Amherst. As part of Amherst College´s "Career Center" a "Health Profession Advising Team" will support students to apply to medical schools. Students from Amherst College have a high admission rate to medical schools, which is a crucial factor for many students applying to Amherst — *This is just one way I see Amherst College support and engage with students in a sort of win-win situation*. You could major in any field, but certain courses within Science and English are required. I found it interesting that almost every medical school in the country requires that the applicants have taken at least a year of general chemistry (with lab), a year of organic chemistry (with lab), a year of general physics (with lab), a year of biology (with lab), a year of college English, and a year of "college mathematics". Obviously, a solid foundation within basic science is crucial for the health profession in the U.S.

Like the situation for students, it is also very competitive to get a faculty position at Amherst College. If you are looking for an **academic career** involving both teaching and research it is very attractive to be employed by Amherst College. The College not only provides (in U.S. standards) rather generous benefits in regard to health insurances and retirement plans etc., but also resources for research and regularly sabbatical leaves. Amherst hires candidates for faculty positions using an open search process with as they say "*an emphasis on generating broad and inclusive applicant pools"*, and the applicant pools are often immense. Evaluation of candidates is based on potential/achievements within teaching as well as within research/artistic creation. As a consequence, Amherst faculty members (untenured and with tenure) are extraordinary scholars, with a deep engagement and with a natural scientific approach in their way of being – *that is at least my impression*.

To get tenure at Amherst means an appointment for life. Tenure is thought to be one way to secure academic freedom, to stimulate exploration of new ideas and criticism of current beliefs, and to avoid stagnation in higher learning. A newly appointed Amherst faculty member, a so called Assistant Professor, will be considered for tenure in the seventh year at the College. There is a rigorous evaluation of tenure track faculty. Yearly, the Chair of the department will evaluate the work and progress of the untenured, and after three years reappointment will be considered. **Effective teaching** is the most important factor for reappointment but it is not the sole factor. Additionally, a **continued scholarly growth** is crucial, as well as if the untenured has contributed to the general life at the College. Finally, after the sixth year the untenured will be considered for promotion (to get tenure). Then an immense documentation from the department and from the applicant will be sent to the "Committee of Six" – the executive committee of the faculty, led by the President and the Dean of Faculty – for evaluation. The documentation consists of departmental recommendations and confidential letters from all the tenured members of the department, giving their view of the candidate´s teaching effectiveness, creative work and growth, and contribution to general life of the College. Additionally, a CV of courses taught and senior thesis supervised as well as evaluations from all

students from every course taught are to be submitted. The applicant should also submit copies of the scholarly work, e.g. publications, and letters from no fewer than six external reviewers (leading scholars in the research field of the candidate) judging the work of the candidate. If the candidate will be granted tenure he or she will also be promoted to the rank of "Associate Professor". The untentured faculty members work really hard to improve their chances to get tenure. And unlike situation at Universities (as Uppsala) (at least the former situation), high quality teaching and pedagogy really makes a difference, being the main indicator, and not secondary to research accomplishment – which indeed is a good way to secure qualitative teaching. It should be noted though that research activities of the Faculty members are taken seriously and not left behind, since research is in various way very much integrated into teaching and it serves as "tools" in their teaching – *which is a lesson to bring home*. In fact, I learned that one important aim of the scholar's research activities is to train students in scientific thinking and skills, and that this indeed is an important criterion to get certain external fundings. I would like to stress though, that teaching qualifications are getting more and more recognition at Uppsala University as well. For example, our faculty has recently elected the first so called "Excellent Teachers", and for promotion to Associate Professors and Professors teaching qualifications are indeed important factors (and should be according to the University´s guidelines).

After reappointment all Assistant Professors on tenure-track are eligible for one year **sabbatical leave** at full salary, and after a positive tenture decision another full year of sabbatical leave is offered. Thereafter, fully paid sabbatical leaves will be offered tenured faculty for one semester every six semesters of teaching. Paid sabbaticals will most often be devoted to research at a different University or Research Institute. Whilst this is one crucial way to promote the research achievements of the faculty member, the College also offers yearly financial support to faculty research, plus set-ups for new faculty, and grants of up to $30,000 to faculty members. Also, all faculty members receive an annual travel allowance to attend conferences and to support research. Though, external funding is something that the College very much encourages, and which is positive in a tenure decision. The College offers support and guidance of all different kinds to help the faculty to receive external grants. Overall, the support of various kinds to faculty members –to support their scholarly growth– and to new faculty in particular, is admirable.

As an employee at Amherst College you typically teach two courses per semester, with compensations if you teach lab courses. You should also mentor honor students doing individual research projects, i.e. thesis works. Besides, it is not uncommon that Amherst faculty offers focused courses to individual students. Furthermore, all faculty members also act as an Advisor to up to seven students. Unlike many of the courses and programs we have at Uppsala University, courses here run for the whole semester. A student typically attends four **courses** per semester that run **in parallel**. That means that Amherst faculty members have classes continuously during the whole semester; normally two or three classes per week (each one up to 80 min), or lab. The scheduling for classes is carefully controlled according to a general schedule. Besides, professors offer so called "Office Hours", when students are welcome to their offices for course related discussions. Since courses run for a long period of time, it is important to keep the students active during the whole semester. That is typically done with homework and midterm examinations, that all influence the final grade. The final week of the semester are devoted to final examinations. The students usually have several "finals" that week. Students and teachers seem to agree that the final grade for a course should not solely depend upon the final examination. Examinations could be classical scheduled exams, but take-home exams and "open book" exams were also frequently used. In line with Amherst motto, to stimulate critical thinking, argumentation and related skills, courses often have elements of oral or written presentation, sometimes including poster presentations. During my semester at Amherst there were several poster presentations, e.g. based on summer research project or "just" as part of a Biochemistry course. The poster presentations were often well attended, both by students and faculty, and frequently you would find the Dean of Faculty and the President there, taking part in lively discussions. Poster presentations are often open to the whole college, which I think is one essential way to "contribute to the College life". Overall, Amherst professors are intensely engaged with their courses and they work really hard. In a student perspective the students are lucky having the opportunity to get a lot of feed-back during the course (all

different elements of a course), lots of opportunities for individual (or in small groups) interactions with the professors. This, I believe, is a key to Amherst´s success.

Students get final grades according to an A, B, C, D, and F scale, where A is the highest grade and F is the lowest (and actuality means failure). Additionally, each grade is divided into three separate grades, denoted by +, -, or "nothing". As far as I understood a C at Amherst College is considered a "failure" in the students' minds. If you as a teacher have a student who is performing poorly, you are required to report that to the Dean of Faculty, around mid-semester, to have time to check in with the student and try to avoid failure (*yet another observation of Amherst College genuinely taking care of all the students at the College*). Failures are really rare at Amherst, which is in contrast to the situation at my home institution where we have a large failure rate at exams. Furthermore, a student failing (in Sweden) will have the opportunity to redo the exam. This is not possible in Amherst. However, I believe that the "failure" back home more closely corresponds to a C in this system. Anyhow, it is of course very important that students in a pre-professional program, like "our" Pharmacy programs, know their area of profession well. As I discussed above the final grades are not only based on the final exam but on several performances and attendances in classes during the semester. Exams are not made in an anonymously fashion at Amherst, as we do at Uppsala University. Since there is a close contact between professors and students, where the professors really get to know the students, it could be a problem with subjectivity when it comes to grading, even if the teachers tries their best to avoid it. In Sweden we have the last couple of year focused on learning outcomes of our courses and to make sure that every student fulfill the learning outcomes, using criteria for a certain grade (although not fully implemented yet). That is indeed what the Swedish Higher Education Authority focuses on in their evaluation of higher education in Sweden. At Amherst College scored points at the exams are still used as a criterion for the grades of an exam (at least what I experienced). The grading could be curved (relative), if the teacher so decided. That was also something which struck me: The freedom given to the professors and a genuine trust of the professors´ (me included) competence and judgment when it comes to course content and grading. Again, being a Liberal Arts College with a big focus on the "activity" and general skills, as compared to progression within a certain subject, i.e. "production", I think that Amherst faculty did the right prioritization. Better for them to focus on student interactions and to quickly respond to the students need and interest, than to strictly follow learning outcomes.

One thing that made an impression on me at Amherst was the so called "Honor Code", or the "Statement of Intellectual Responsibility", which every student undertaking studies as at Amherst College agrees to abide by. The statement reads:

"Every person's education is the product of his or her intellectual effort and participation in a process of critical exchange. Amherst cannot educate those who are unwilling to submit their own work and ideas to critical assessment. Nor can it tolerate those who interfere with the participation of others in the critical process. Therefore, the College considers it a violation of the requirements of intellectual responsibility to submit work that is not one's own or otherwise to subvert the conditions under which academic work is performed by oneself or by others."

This is obviously an axiom, but what impressed me was the fact that no examination guard was needed during exams at Amherst. Students could simply be left alone in the lecture hall. Instructors would just visit the exams a few times if the students had questions. The same applies to take home exams, where it was taken for granted that the students did not use anything that would not be allowed to finish the exam. Often (up to the teachers) the student needed to verify with their signature also on each exam that the work was their own. There seemed to be a mutual respect and trust between students and professors, which is comforting. I think that the community building process, to be part of Amherst College, aid a great deal to the students respect for the "Statement of Intellectual Responsibility". Cheating on exams and written assignments happens occasionally back home. I think that the anonymity as oppose to inclusiveness can make the boarder to cheating lower.

(B) **Preparation and planning**

I was reached by the decision that I was granted a STINT fellowship to be placed at Amherst College in Massachusetts, U.S., just before Christmas 2012. In the beginning of January I received information about who my contacts at Amherst College was going to be, namely: Janet Tobin, Assistant Dean of the Faculty, who is responsible for the Excellence in Teaching Program at Amherst, and who has a long experience of taking care of Swedish STINT fellows, and Professor Helen Leung, Chair of Chemistry, and thus head of the department I was going to visit. I immediately contacted them and got quick and welcoming replies from both of them. Within a week we had decided on a week for the planning trip. At the same time my contact at the Chemistry department let me know that they were very interested in a course in my specialty; such as an advanced organic chemistry, drug design, or medicinal chemistry course. In early February I was informed that they were about to compile a list of courses to be offered in the fall of 2013, and that a short course description was needed before the end of the month. All new courses need approval by the Faculty Meeting before they can be included in the course catalog in time for the pre-registration period in April. By e-mail correspondence, with Professor Leung and Professor Bishop (Associate Professor at the Chemistry department, with good experience of analogous courses to mine), we decided on the course title “Medicinal Chemistry and Drug Design” and eventually on a course description. They were both very helpful in this process. During the same period of time I spoke to and met with the previous STINT fellow at Amherst (Maud Eriksen, Uppsala University). The information I got from her about preparations, travels, housing options, and about Amherst and the College was invaluable. The College did not provide housing options, but on the other hand Mrs. Tobin was very helpful in the matter; giving feedback on the housing options that we found at www.sabbaticalhomes.com, and by suggesting some alternatives. Not many houses were available for rent at that time. Anyhow, we decided to wait until the planning trip before signing anything, so that we could visit the places.

Mrs. Tobin and Professor Leung also provided me and my husband with a schedule for our planning visit, which turned out to be extremely well organized! Our planning trip took place week 13, and we were met by a welcoming letter, information folders and flowers already at the hotel (Lord Jeffery Inn, an old renowned College Hotel) when we arrived! The first thing on the schedule was breakfast with the Dean of Faculty (Professor Call) and the Assistant Dean of Faculty Mrs. Tobin. We were overwhelmed by the warm welcome we got. During the week in Amherst I met with the majority of my future colleges and administrative personnel at the Chemistry department. Furthermore, I had appointments with both the IT department and the Human Resources (HR), which allowed me to get an e-mail account and access to their web portal already at this point. Moreover, we could initiate the VISA application process with their HR. Furthermore, I attended a few lectures, discussions sections and seminars, which I really recommend to do in order to get a sense how teaching is performed at the College. Even though there was a tight schedule, we also had time slots for looking at housing options. To our surprise and luck, a housing alternative just next to Amherst College arose during our visit. The house was a so called College house, and it seemed perfect for our family. The other three alternatives that we looked at were much less convenient for our family; too far away, too expensive, or not fully equipped and furnished. Altogether, the planning trip was a great experience and preparation for the coming semester.

When it comes to schools for the kids we learned the kids belong to a certain public school based on where they live. Thus, since we now knew were to live we also knew to which school our kids were going to attend. There are plenty of documents that are needed to get the kids enrolled in the public school of Amherst, like evidence of health insurance, proof of residency, birth certificate, physical examination, release form from school in Sweden, and immunization records. The immunization program in the U.S. is different to Sweden, so extra immunizations are required. I strongly recommend coming STINT fellows to check the website or contact the schools as quickly as possible in order to have everything ready before you leave Sweden. Beside this, everything around to school went very smoothly.

We decided to go to Amherst in early August (Aug 7th) to overlap with the house owner before they left, and also to have time to prepare for my course and to get settled.

(C) Tasks and responsibilities

The main task for me at the Chemistry Department at Amherst College was to give an upper level course in Chemistry, more specifically in "Medicinal Chemistry and Drug Design". The course was scheduled as 2 * 80 minutes classes per week the whole semester (September 3 through December). Moreover, I was assigned three "Office hours" per week. I was the instructor and only teacher of the course which meant I prepared, taught and took care of all examinations of the course myself. The course ended up having one midterm examination and one final examination (December 17th). Even if I was the sole teacher and instructor I always felt I could discuss my concerns regarding the course with colleagues and the secretary at the department, who all were very helpful (although very busy and hard-working). The Chemistry Department provides several introductory courses in chemistry and biochemistry and an upper level course in chemistry (like mine) was a valuable addition to their Curriculum, and especially for their Chemistry majors. The course was indeed popular with an initial enrollment of 28 students, which I learned was a lot for an upper level course in Chemistry. Both I and the Chemistry Department were indeed expecting a smaller class, but it was also exciting to see a big interest in the subject. Not only Chemistry majors but also Biophysics/Biochemistry, Biology and Neuroscience majors were enrolled in my course. Beside this major task and responsibility I was "treated" as an ordinary faculty member and a "new faculty", which meant some other activities during the semester as will be described briefly below.

(D) Activities during the semester

The main activity for me at the Chemistry department was to plan and prepare material to my course and to teach. I have taught medicinal chemistry in different formats at my home institution previously; however most of the material I had was in Swedish. Moreover, for my Amherst course only organic chemistry (I and II) were prerequisite courses, which meant that an introductory part in biochemistry (focusing on drug targets) had to be included. Thus, the lecturing part was going to be much more comprehensive as compared to my former courses. This meant I had to prepare new lectures allover and in English. Since I came to Amherst without having prepared for the course (except mentally), I was eager to start immediately after arriving. So, after a few days of settling in our house in Amherst I started to install myself at the office at the department. I got access to a big office from a colleague being on sabbatical leave. The first couple of days were spent on getting keys, cards and access to important areas, and to get the office, including computers and printers ready. Thereafter, I started to plan the content of the course and to write on the syllabus. The syllabus was to be handed out to the student at latest the first day of the course, but rather uploaded online (in Moodle) a bit earlier. Moodle is Amherst College´s web-based course management system, which allows faculty to easily set up interactive online spaces for their courses. It is a similar system to "Studentportalen" at Uppsala University. Beside Moodle Amherst College has a database called ACdata which allow faculty to access information about what courses students have taken previously. Since I at this point knew which students that possibly were going to attend the course (you never know since the first week is an "add and drop period") I started my planning by studying what courses the students had taken previously. This was very helpful for planning the content and level of the course. However, the diversity of the students was indeed very challenging and required compromises. Furthermore, since courses here are given in parallel over a longer period of time a detailed planning in order to prepare a reasonable and viable syllabus/schedule was required from my side.

My plan was to mix lectures with discussion intensive classes (based on problem sets), and to end the semester with special topics and student presentations. With this arrangement I hoped that the students would get a solid understanding of biological drug targets and general approaches for drug discovery, design, and development during the first two thirds of the course. And further, that this would prepare them for individual work in the final part of the course, where I expected them to study primary literature and case studies. How did it go? Well, overall very well: Most of the preregistered students (both juniors and seniors, i.e. third year or fourth year students) coming the first week stayed in class. Lecturing went well, even if I had to prepare myself carefully to feel comfortable with the English. It was amazing to see a

participation rate of almost 100%. Further, I was astonished by the interest and genuine engagement showed from many of the students. Often, they refereed to medicinal chemistry and science/research in general as "cool". That I found "cool"! Rather than try to make things easier for themselves they wanted to learn and work hard(er). That was a somewhat new experience (even if I definitely meet a number of this kind of students in Uppsala as well). *What if we could enforce that spirit (for science) into our youngsters in Sweden!* The way I normally do with problems sets is that the students get a set of problems that they study and try to solve at home. In class they get a few minutes to discuss in groups and then present in front of class. This is followed by an open discussion. Before the first class with a problem set I realized (from students coming to my office hours) that they were not used to present solutions in front of the class, and that they were concerned about it since the problem sets were to be graded. However, it all went well after assuring them that genuine preparation and active participation was the "only" thing required for a high grade in this part, and that the whole idea was to discuss different ways to approach a problem and to bring difficulties up to discussion. It is my experience that this format gains a deeper understanding. Indeed, many students told me (and wrote in the course evaluation) that they learned a lot during the presentations and discussions, and that the "open climate" made them feel comfortable to participate in discussion. The way students often work with problems (i.e. questions) in other science courses at Amherst College is through homework, which they hand in for grading (at least what they told me). The students seemed to appreciate the alternative way we did it in my course since they got good feedback on their attempts and since they learned a lot listening to and participate in discussions around the problems. Another reflection around the problems sets was that some of the students (mostly juniors) were overwhelmed by the complexity of the problem sets, whereas others (mostly majors) had less difficulty in solving the problems. The diversity of the student body bothered me quite a bit in my preparations. Anyhow, I think the course ended up being a decent compromise for all my students. Especially since we ended the semester with individual work where the students studied a specific topic, assigned reading to class (an scientific article) and made a 30 minutes presentation in front of class, followed by a "questions and answers" ("Q&A") session. This part allowed students to work according to their level of knowledge, and they felt they learned a lot during their preparations (according to the course evaluation).

To my surprise there was not a standard course evaluation template to use, it was really up to the teacher to find his/her ways to get feedback from the students. However, there was a template for the tenure track evaluations; an extensive evaluation of the skills of the teacher from a student perspective (and not really a course evaluation). Out of curiosity I made my own course evaluation including some of the tenure track questions (i.e. evaluation of me as teacher) but also questions relating to what the students learned and reflections about their engagement. 65% of the students participated. The overall impression of the course was rated to 4.1 (of 5), and the comments told me they enjoyed the course, that the subject was really interesting and that they learn a lot. Their main complaints were about class size and that the lecturing part could have been more engaging, or that they would have liked more of the problem solving part (which they really liked). Rating of "*how helpful a certain elements of the course have been for their learning"* on a 1-5 scale gave my lectures and lecture handouts 4.4 and 4.7, respectively, problem sets 4.7, and their own and others student presentations 4.8, and 3.9, respectively. I think that summarized the course quite fairly. So, what about me as a teacher? Three queries were used, i.e.:"*Please comment on Prof. Sandstroms ability to organize and to explain the material", Please comment on Prof. Sandstroms ability to help you make connections and to stimulate your interest to the material, Please comment on Prof. Sandstroms helpfulness, accessibility, and her interactions with the students during lectures and office hours*. Overall, the majority of comments were extremely positive, and insightful! In fact, some of the very insightful comments I got have really helped to strengthen myself and my ideas as a teacher very much. The students have helped me to formulate some concepts that I intentionally, but also more or less unwittingly, use. The whole experience will definitely have an impact on my future teaching.

During a regular week, I prepared the lectures (normally a Power Point presentation) including handouts or problem sets to the next coming lecture. Since my classes where taking place Tuesdays and Thursdays, I normally worked on the lectures Mondays and Wednesdays. I also had office hours when the students could visit me if they had questions. Usually, they made appointment with me at other times than the office hours

since they often were busy with other classes during my office hours. Fridays were often busy with department activities, which I will come back to.

Beside my course I also participated in department and faculty activities as a "normal" faculty member. At the Department this implied participation in department meetings at Fridays and in the Friday seminars, where either Major students or invited scientists held seminars. In case scientists were invited, all of the faculty members were scheduled for a half an hour discussion with the guest, sometimes including me. I was also treated as a "New Faculty". As a newly employed faculty you were invited to an introduction program under the first semester, which started with "The Deans Welcome Barbecue" for new faculty and their families already in June (which I missed). A major portion of the "**New Faculty Program**" was three lunch meetings where the first one was focusing on to get to know each other and to prepare for the first weeks of teaching. The first lunch meeting started with a "welcome speech" given by the President. Moreover, faculty members in leading positions as well as all new faculty members introduced themselves and as did librarians, registrars, Deans, and Directors of the Mead Art Museum, Athletics, Center for Community Engagement; and Department of Information Technology. All these instances also had their own introductions and receptions for "New Faculty" during the semester. The second new faculty lunch meeting provided an opportunity to discuss early experiences of classes and to meet with colleagues who joined the Amherst Faculty within the last two years. A lot of the discussions were focusing on tenture track issues, and how to create good interactions with students. The new faculty lunch meetings ended with end-of-year reflections and plans going forward. I was impressed by the structured and welcoming introduction all new faculty got. This is a lesson to bring home. Another thing I participated in during the semester was the traditional Convocation in early September and monthly Faculty Meetings, chaired by the President and Dean of Faculty.

As part of Amherst College´s community building efforts there is a program called TYPO, i.e. Take Your Professor Out, which means that students will get money from the College to take their Professor out for dinner. I was invited by three students in my class. This was an excellent way to get to know the students a little bit better, and they me. To be mentioned in this context, Amherst College also supported faculty members with an allowance of $200 per year for "entertaining" students.

(E) **Important lessons**

The whole experience at Amherst College has given me a wider perspective of higher education in general but has also inspired me as a teacher in many ways. I have talked about important lessons throughout my report, but I will try to summarize them briefly again:

First of all, I have reflected over "Community Building" and its impact on several levels. The College, Faculty members and Alumni all put a lot of efforts into welcoming *all* students into their community – to make them part of the "brand" Amherst College. This, I believe is a crucial way to get students engaged, to enforce them to try their best, and to stay respectful and honest to the faculty. Community building also secures active alumni and hence the future of Amherst College. There seems to be a mutual respect between faculty and students, and it was nice to see how they work together as a team, and not "against" each other. Something else related to "community "and which contribute to the high quality education at Amherst College are: firstly, the "Honor Code"/"Statement of Intellectual Responsibility" that the students has to abide to, which I think work because the students feel included in this fine community, and secondly, the close contact between students and faculty members, both in courses and as advisors. Since the faculty members at Amherst are scholars/artist of the highest standard I am convinced that the faculty members serve as important role models when it comes to critical and scientific thinking and creativity. *To let students work close to these people is the key to high quality education.*

On an organizational level the system with "Tenure Track" and the in depth evaluation of the untenured´s teaching qualification, scholarly work and college engagement is an excellent way (although tough) to secure a faculty of highest quality, and thus teaching of best quality. Since pedagogic

achievements are of crucial importance to get tenure it is really a way to stimulate and to appreciate deep engagement in teaching: This is “career”-lesson to bring home.

For me personally as a teacher, I am now even more confident that student led discussions around problems are efficient ways to improve deep learning and critical thinking, as compared to only lecturing. Further, that an “open climate” under such discussions is crucial, especially if you are dealing with students of different background (at Amherst juniors had a big respect for seniors, for example). Additionally, one thing that my stay in Amherst has stressed is that impact of challenging the students, not only to improve learning, but also to improve their self-confidence and in the end improve their professional identity.

Another lesson, or rather a good experience, was to study the system of courses running in parallel. A good thing with this is that it stimulates a continuous and more equal (over time) engagement with the course, especially since several “part-examinations” are required under the semester. Student will in this system get used to a study-intensive schedule, which improve their skills in planning and to prioritize. Also, they will get “exposed” to the subject a longer time which I think is good for lasting learning, and to make connections to other courses. Especially, I got a good impression of students doing honor thesis work (independent research projects) in parallel to other courses during their senior year. It became natural to the students to go to the research lab during all “free time”, which made them feel familiarized with the laboratory environment. A disadvantage with courses running in parallel could be that it easily could end up occupying teachers for a longer period of time and that it requires more part-examinations.

(F) Action plan - topics to address and if possible introduce in Sweden

- Personally

To increase the portion of problem set/discussions (flipped classroom) as compared to lecturing. Also, to involve more primary literature (scientific articles) and student activities in teaching. In line with this I would like to find ways to highlight the research behind theoretic concepts and to make research questions (scientific methods) an even more natural part of teaching. With this I hope to stimulate interest, deeper understanding, and scientific thinking and to challenge the students.

- For the Faculty of Pharmacy

To work on “community building”-activities within the undergraduate programs at the Faculty of Pharmacy. Being a rather small community (close in size to Amherst College), with a very active student organization, an alumni network and a rather specialized workforce, we have the best conditions to succeed. We should work on activities where teachers, alumni and students meet or work together, for example in career planning for the students, in courses, in social events and in outreach activities.

To look into the possibility to have courses running in parallel.

To work for internationalization of Pharmacy and Drug Development/Usage Educations, e.g. through international master programs or student exchanges. Practically speaking I now have a course in “Medicinal Chemistry and Drug Design” that could be offered in English.

To strive for a situation where Senior teachers/Professors are more involved in discussion intensive seminars and labs, instead of (only) classical lectures. Given their experience it would be very valuable for the student to meet with them more closely.

- For Uppsala University and for Swedish research and education system.

To advocate, hopefully through a STINT alumni organization, sabbatical leaves for University teachers. This would not only allow time for their scholarly work, it would also increase productivity, stimulate

internationalization and improve the quality of research. Eventually, this would have positive effects on teaching quality.

To introduce Liberal Arts education in Sweden as an initiative to educate well rounded people for future leading positions in Sweden. Indeed, a former STINT fellow has already initiated a Liberal Arts Program at Campus Gotland, Uppsala University. Additionally, it would be interesting to introduce "Liberal arts streaks" into other programs. For example, to have "Liberal arts streaks" of Humanities, Social Sciences and Art in Science Programs, and "Liberal arts streaks" of Sciences in Humanities and Social Sciences Programs. This would definitely improve the knowledge and understandings between disciplines. Peoples with a wider perspective will contribute to a better world.

(G) Plans to maintain contact and collaboration with Amherst College

Even if we have not made any concrete plans yet I am confident that the network established with Amherst College will be useful in both directions in the future. For example, we could look into possibilities for both student and teacher exchanges. In fact, one of my Amherst students is presently looking into the possibility (i.e. applying for a scholarship) to visit my lab for one year. Also, it would be nice to welcome Amherst faculty members to stay here at Uppsala University during their sabbatical leaves.

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Anja Sandström, Uppsala 31/1 2014