



NEW YORK UNIVERSITY



Mittuniversitetet
MID SWEDEN UNIVERSITY



NYU | ARTS & SCIENCE

Teaching sabbatical at



(Washington Square Park)

Report from a semester at Department of Chemistry, New York University

STINT – Teaching Sabbatical
Håkan Edlund, Mid Sweden University

Introduction

As a part of the Teaching Sabbatical program founded and financed by STINT - The Swedish Foundation for International Cooperation in Research and Higher Education I had the opportunity to be a visiting professor at the Department of Chemistry, Faculty of Arts & Science, New York University. This final report covers my experiences the fall semester of 2017.

New York University

Founded in 1831, New York University, NYU, is the largest private university in the United States. NYU presents itself as two triangles, the three campuses in New York City, "the inner triangle", at Washington Square Park, in Brooklyn (Tandon School of Engineering) and the Langone Medical Center on 1st Ave (School of Medicine and the Hospitals Center). The outer triangle is of course New York as the main hub, and the degree-granting campuses in Abu Dhabi (since 2010), and Shanghai (since 2013), they do also operate 11 global academic centers (one in Washington DC).

The student body is more than 58,000 students, with more than 19,000 employees. The full-time faculty consists of 5,000 (of which 3,700 are Tenured and tenure-track).

In the fall of 2015, there were 58,400 students (28,300 Undergraduates, 24,600 Graduate and Professional students: and 5,500 Noncredit Programs students including Employers-Degree Programs and Employers-Diploma Programs). Housing for more than 11,000 undergraduate, graduate and professional students. (Undergraduate tuition fees \$49,000 (2016-2017)).

The total budget for the fiscal 2017 (September 1 2016 to August 31 2017) is \$3.10 billion apart from the Medical Center, (\$9.44 billion including the Medical Center). Total research expenditures were \$700 million.

Faculty of Arts & Science, the core body of the old University has three divisions or "sub-faculties", Humanities, Science and Social Sciences, working together in the College of Arts and Science (CAS) for the undergraduates, 7484 students, and the Graduate School of Arts and Science (GSAS), 3885 students. More than 30 departments and they also divide into more than 50 Research Centers and Institutes.



Department of Chemistry, Majors in chemistry and biochemistry, major in global public health/science with a concentration in Chemistry, Double Majors in chemical and biomolecular engineering and of course minor in chemistry.

25 faculty professors (research professors, tenured), 20 clinical professors (teaching responsibilities), 3 research scientists, 10 administration, 6+9 teaching & research lab support services, and more than 100 graduate students. Large classes are general chemistry with more than 500 students.

Preparation and planning

The preparation and planning activities started almost immediately after receiving the positive message a few days before Christmas 2016. My initial academic contact was the head of the department, professor Jim Canary. After an iterative process, we had more or less decided on my major tasks and responsibilities and on dates for my planning trip.

During my visit in the spring, I was scheduled to meet the director of undergraduate studies, professor Alexej Jerschow. He was also a colleague and the person I borrowed “my” course from. I had also the opportunity to meet a few other of the faculty members. One was Stefano Sacanna who had an equivalent course during the spring semester so I could attend two lectures during my planning trip to get some ideas for “my” future course and that was very helpful. A second important person I met was John Halpin, a clinical professor, responsible for the general chemistry course and received the 2017 Distinguished Teaching Award, New York University's highest honor for teaching. The faculty members who is not doing any research and have 100% teaching responsibilities are called clinical professors.

Another important issue to deal with was housing. Me and my spouse was very early on searching for housing and during my planning trip I did schedule to meet our landlord and check out the apartment that we did find through Airbnb and signed early on. This is important and could be a tricky thing because NYU did not help in any way, even though they have over 1000 apartments for faculty employees in the heart of Manhattan. We ended up on the New Jersey side of Hudson River, very convenient even if it was not Greenwich Village that we did aim for in the first place. My daily commuting to the university was very easy-going, it took 25 minutes door-to-door including a ride with an equivalent to the subway system passing under the river (PATH), and that wasn't bad.

Tasks and responsibilities

My main task and responsibility was teaching one of the physical chemistry courses CHEM-UA 652: Thermodynamics and Kinetics. AT NYU the chemistry courses was divided in theoretical courses and lab courses. Physical chemistry had two theoretical courses and one laboratory course covering the two theoretical ones. I will come back to the fact that I (the teacher) was completely responsible for the course. The course was one of six mandatory chemistry courses for chemistry majors at NYU and was taught every semester. In addition, students aiming for the graduate school of medicine did attend the course. During the semester, I had one PhD-student helping with recitation hours and with some of the homework and quiz grading. I did teach two 75 minutes lectures every week except those weeks when we had the first and second midterm exam because they were scheduled on ordinary lecture time. I did also have scheduled office hours. I like the concept of office hours when the students have opportunity to get personal tutorials and ask in-depth questions about things that are confusing or maybe not addressed fully in class.

CHEM-UA 652
Thermodynamics and Kinetics-16

This course develops the connection between thermodynamic quantities as energy and entropy, molecular properties and reaction kinetics. Topics include properties of gases, classical thermodynamics, and kinetics.



Håkan Edlund
he16@nyu.edu

1

Activities during the semester

My first activity outside the department was an introductory course, NYU Classes Training session, The NYU Classes was the learning management system used at NYU. Here students accessed course materials and the different graded assignments and exams was shown.

I visited classes given by other faculty members at the department, one class was particularly interesting to follow, professor John Halpin lecturing the general chemistry course for 550 students still able to interact with the students during class. He did use “clickers”, a classroom response system, that all students bought before class. Professor Halpin had all his lecture notes written before the course starts as a part of the reading material bought.



I attended a series of seminars from the NYU Center for Advancement of Teaching; one title was *What Makes a Great Teacher? A Discussion with 2016-2017 Distinguished Teaching Awardees*. John Halpin from Chemistry was one in the panel.

I am interested in the extensive program in undergraduate research that is well developed in the US. I did interview both professors and students about the undergraduate research program/courses they had at NYU.

One other thing that I was able to follow during my stay was different New Faculty (starting on the tenure-track system) orientation activities. They really emphasized this through meetings and seminars: *facts&figures, learning about the tenure track system, NYU's non-discrimination and anti-harassment policy & compliance, Title IX. What to do in the classroom when unexpected things happens, where to send students that didn't feel well of different reasons, etc.*

I gave a seminar about my research in a Chemistry Roundtable event; a professor and a graduate student in the chemistry department give a presentation about their research to undergraduate students. That was a popular event done twice a semester.

Together with the head of the department, I arranged an afternoon seminar and discussion towards the end of my stay. The seminar focused on my experiences as a scholar on a teaching sabbatical. I started with a 45 minutes presentation *“The education system, differences and similarities, teaching undergraduate chemistry at the university level, a Swedish viewpoint”* and then questions and discussions about pros & cons.



As a large research department, I had many possibilities to attend to research seminars, both specialized and more general ones.

At last I must say that the university, faculty and department was good in having different events as welcome breakfast, new faculty welcome reception (with the president of NYU), International Faculty and Research Scholar Reception, Scholar speaker series, Christmas party for the department (with the president), Christmas party for the faculty...

They did also arrange a program called International Spouses & Partners Programs, including welcome breakfast and different trips and a conversational English course where the spouses/partners were placed on their level of knowledge in English (International Spouse/Partner English Program (ISEP)).

Important lessons

It was not that easy to get contact with the different faculty members. One thing is that the department didn't have any natural places for informal meetings as coffee hours, the Swedish fika is fantastic, or places to gather to eat your packed lunch at have some conversation. The doors to the offices were always closed and you needed to contact different faculty members and ask for lunches and meetings.

Comparison between the foreign and the home institutions

Student population: NYU has grown the last years due to two new global campuses and a polytechnic school) and today they are almost 60 000 students compared to 13 000 at Mid Sweden University.

The relation between research and education: In Sweden it could be very different teaching loads for professors depending on research sources but at NYU all research professors had the same amount of teaching, one course per semester, "you didn't pay yourself free" even if you had a lot of research grants. The department did also have clinical professors who did just do teaching and they were supposed to have three ordinary sized classes per semester. When I talked about "tjänsteplanering" they did not understand what I was talking about because the tenured track professors were fully paid by the faculty and never calculating working hours.

The relation between teacher and students: It was hierarchical and with a professional distance between professors and students but at the same time a very friendly atmosphere. I think that the professors at NYU are more demanding and at the same time they were more caring about the individual student's learning and they had a very good control of the individual students' efforts. The students was used to get direct and constructive critics depending on performance.

The institution's view of breadth versus specialization in education: There is a huge difference in the view of breadth versus specialization but some of that difference is a fact that the bachelor program in Sweden is three years and in the US, it is four years. The students could both aim for a minor in a different subject but also have the opportunity to study both social sciences and humanities.

Competence development for teachers: There was not any mandatory development path for the tenure track members at NYU but teachers at the department had the possibility to participate on the broad variety of courses, workshops and seminars held by the Center for the advancement of teaching. To name a few events, *Teaching Lunch Programs* (offer practical resources to enhance teacher effectiveness in the classroom), *Teaching Intensive Workshops* (workshops focusing on practical aspects of teaching, such as using technology, designing syllabi, and leading class discussions), *Teaching at the Tap Room* (is a chance for faculty to come together to discuss pedagogical issues with experts and peers alike in an informal and relaxed setting) and different *Teaching conferences* focusing on areas of interest to the teaching community. One other interesting opportunity is the *Teaching Consultation Services* schedule a consultation on any aspect of your teaching or to arrange a classroom observation.

Teacher recruitment: I talked to the head of the department about their recruitment and recruitment strategies. Last year they did try to recruit 4-5 new faculty but after the application and evaluation process they thought that only two (out of 80) was suitable for the tenure track system. This year the aim was 3-4 new faculty members and the process was ongoing during the fall. All new recruitments at the college of Art&science did start at the same time (late august).

At NYU, teachers are completely responsible in a more direct way than in Sweden. Some things were decided on a very early basis as when and how long the lectures were supposed to be, when the recitations were supposed to be (attended by a PhD-student as a TA, teaching assistant). Furthermore, we had office hours and these I had to set but I did decide on how many and when. The date, time and length for the final exam was also set. Two months before the course started, they asked me about what literature I would like to use.

Three large differences:

- The most surprising thing was that I was supposed to write my own course plan (syllabus). As we know in Sweden, it is a rigorous path writing a new course plan especially when it is a part of a program. Decisions at different levels of our administration, here the course could change every year depending on the professor. In the syllabus, I did present my aim of the course and the different exam methods (quizzes, homework and written exams). I also decided how the different examining moments should be weighed against each other before the grading. The course had unprepared small tests (quizzes), homework questions to be handed in and three exams (2 midterms and a final).
- I also decided rules for missed examinations. E.g., I had three exams during the course and if you missed one of the two midterms, you could drop it if you had a medical certificate. All results were counted against the final grade and there were no excuses.
- Moreover, I was responsible and decided if the student had the possibility to make a "make-up" exam at the final exam.

The last and very important task was the grading of the final exam and editing the course grades into their system. After the exam was given, I had 72 hours to grade the final exam and then decide upon the course grade. On the other hand, you did know about the date for the final exam one year in advance, so no meetings, conferences or holiday plans during those three days.

Action plan – topics to address and if possible introduce in Sweden

I have not been home for so long but I have had time to discuss with colleagues and present my experiences at a departmental staff meeting.

For some time we have been talking about undergraduate research and planned for introducing that in our new chemical engineering program at MIUN. I think my discussions at NYU during the fall can be important in the future developments of new courses and improvements of the newly launched course at MIUN.

One thing I have reflected during the fall is the introduction and welcoming of new employees. The introduction program at NYU is of course difficult to copy but it was very extensive and kept going for more than a year. I think that we can do more and better at my home institution. It is too easy to be left alone as a new faculty and the university missing out the possibility to create a feeling of responsibility for the quality of the university. I also think of my own welcome and that I will be much better caring for the newly employed and presenting myself, it is so easy that the responsible for mandatory walking around with new employees miss presenting all staff.

At last, I would like to express my gratitude to Mid Sweden University and STINT for this opportunity, giving me experiences that will influence my life both private and as a faculty member for many years to come.

Thank you / Håkan