



# BIOMOLECULAR MODELING IN A SOUTH BOHEMIAN CASTLE

---

*by Laura Tociu, Princeton University Class of 2016,*

*IIP intern at the Institute of Structural Biology and Nanotechnology,*

*Czech Academy of the Sciences, South Bohemia*

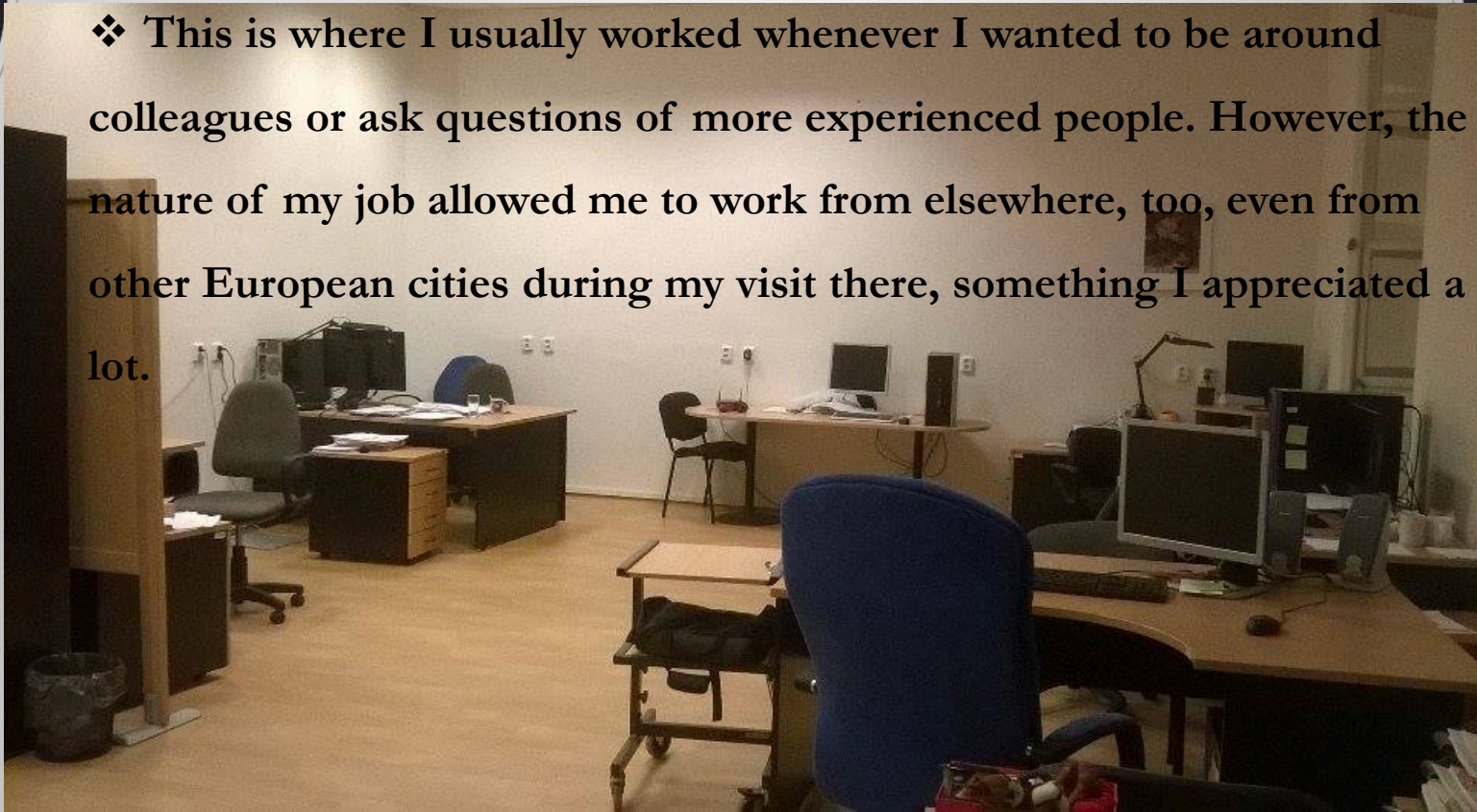
# THE WORK I DID AS AN INTERN

- ❖ I worked on two independent projects, one in calculating the binding energy of an amino acid to a protein and relating this energy to protein function, and another one in studying ion channel energetics of a  $\text{Ca}^{2+}$  channel called the Orai1 channel
- ❖ All work I did was computational, meaning I did not set foot in a traditional, “wet”, chemistry lab



# THE COMPUTER LAB

❖ This is where I usually worked whenever I wanted to be around colleagues or ask questions of more experienced people. However, the nature of my job allowed me to work from elsewhere, too, even from other European cities during my visit there, something I appreciated a lot.





# THE RESEARCH GROUP AND THE PEOPLE

---

- ❖ While there I was immersed in a large group of researchers, the majority of which were summer students/interns like me and originated from many different countries: US, Russia, Belarus, Poland, Iran, Ukraine etc.
- ❖ At the end of the summer each of the students delivered a presentation about their project. I learned a lot about new chemical systems and how to study them. This was probably the most amazing aspect of the summer as a whole.



The group of summer students/interns and our supervisors at the Institute





# HOW MY WORK IMPACTED THE INSTITUTE

---

- ❖ Both projects I worked on were very important for the Institute and there were many people working on them. I attended many discussions among several researchers where we all brought new ideas and approaches to the table. I felt engaged and helpful.
- ❖ In the future, the work I did has the potential to be included in scientific journal articles.



# Arginine Repressor Binding Energetics: Local and Global Picture

by Laura Tociu  
advised by  
David Řeha  
Saurabh Pandey  
Rüdiger Ettrich  
Jannette Carey



Institute of Nanobiology  
and Structural Biology,  
Nove Hradý



Title page  
of the  
presentation  
I delivered  
at the end  
of the  
summer  
to the entire  
research  
group. The  
presentation  
contains  
original  
research on  
the enzyme  
Arginine  
Repressor.



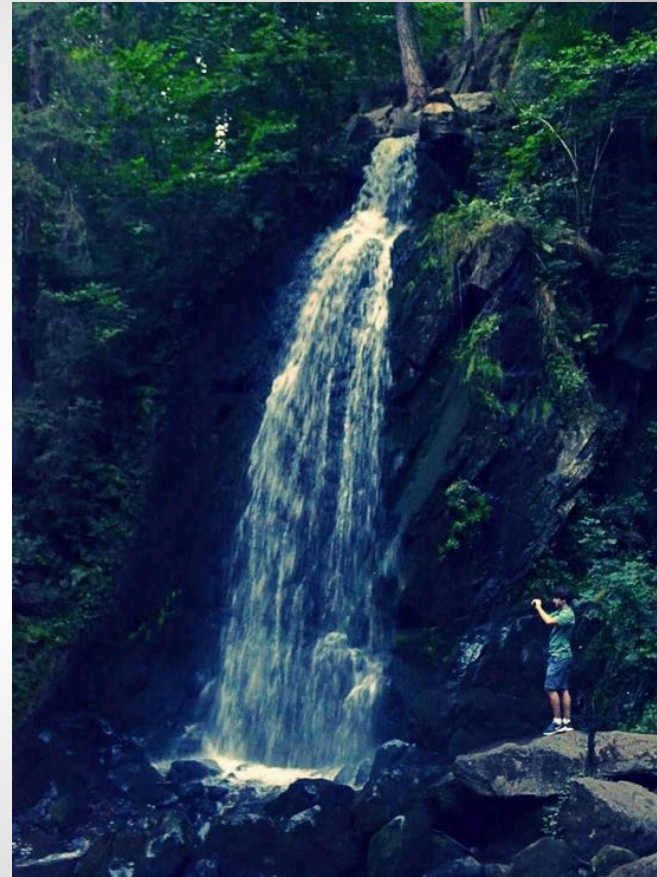
# WHERE I LIVED

---

- ❖ I lived in a beautiful castle in a small Czech town called Nove Hradý.
- ❖ One of the aspects of this past summer that I cherished the most was the forest and the waterfall outside the castle. I would routinely go jogging there.



The interior of the castle and the waterfall I would run to almost daily. It is located around 2 miles from the castle.





# FUTURE PLANS

---

❖ I have only amazing memories of the people and places I visited this summer. The work environment was laid-back but productive, and the people very welcoming and warm. I will certainly look into possibilities to return to Czech Republic or at least Europe for a post-doctorate or maybe a teaching position in the future.