On October 18, 2013, the Chemistry STAIRSTEP group hosted a research seminar. The group decided to invite Dr. Eric Bittner, a professor of physics at the University of Houston, to come and speak at Lamar University.

Dr. Martin and Crissie Vandehoef, one of the chemistry STAIRSTEP participants, first saw Dr. Bittner speak at a computational chemistry conference hosted by Texas A&M. Dr. Bittner was a visiting scholar at Stanford University in 1996 and 1997, he received the NSF Career Award in Chemistry in 1999, and was awarded the UH Research Excellence Award in 2008. He frequently travels to Montreal to work in collaboration with a close friend.

Dr. Bittner’s talk involved his research pertaining to photovoltaic cells that he performed in collaboration with a group located in Montreal, Canada. It involved utilizing his background in theoretical physics to model the behavior of electrons involved in organic photovoltaic cells. In relation to these electron transfers he discussed the ultra-fast spectroscopic techniques used to view these femtosecond transitions. If you can imagine just how fast a femtosecond is – that’s 0.0000000000001 seconds!

Dr. Bittner also discussed the relative efficiencies of many different types of solar cells. He provided a website which offers more information on solar cell efficiencies – www.nrel.gov.nepcv. He also discussed the reasons for using organic photovoltaic cells instead of other solar cells, even though they have the lowest efficiency.

Attendance

Six STAIRSTEP students attended: Crissie Vandehoef (CH), Stephen Tanton (CH), Allison Perdue (CH), Kristeena Ingram (CH), Kaitlin Stevens (CS), and Casey Cole (CS).

Including STAIRSTEP students, eighteen undergraduate students were in attendance. The majors represented included Chemistry, Biology, Chemical Engineering, Biochemistry, Computer Science, and Forensic Chemistry. Of these there were three sophomores, eight juniors, and seven seniors.

Lastly 12 graduate students were in attendance. All graduate students were Chemistry Masters students.