An international exchange program for undergraduates majoring in chemistry from the United States, Ireland and Germany

S. M. Lunte\textsuperscript{1}, C.E. Lunte\textsuperscript{1}, J. Aube\textsuperscript{1}, F. Regan\textsuperscript{2}, P. James\textsuperscript{2}, H. Vos\textsuperscript{2}, R. Gawley\textsuperscript{3} and O. Reiser\textsuperscript{4}

\textsuperscript{1}University of Kansas, \textsuperscript{2}Dublin City University, \textsuperscript{3}University of Arkansas and \textsuperscript{4}University of Regensburg
The Founders

Professor Oliver Reiser
(Institut fur Organische Chemie, University of Regensburg)

Professor Han Vos
(School of Chemical Science, Dublin City University)

Professor Jeff Aube
(Departments of Medicinal Chemistry and Chemistry, University of Kansas)

Professor Robert Gawley
(Department of Chemistry and Biochemistry, University of Arkansas)
Participating Institutions

- University of Regensburg, Germany (lead)
- Dublin City University, Ireland
- University of Kansas, USA
- University of Arkansas, USA
University of Regensburg

- Founded in 1962
- Student population approx 17,000
- 23 faculty in Chemistry and Pharmaceutics
- Strength in organic, medicinal and bioanalytical chemistry
Regensburg

• Founded in 179 AD
• Located in the heart of Bavaria on the Danube
• Population approximately 131,000
Dublin City University

• Founded in 1980
• Student populations approximately 11,500 students
• Approximately 20 faculty in chemical sciences
• Multidisciplinary and international programs
• Strength in chemical and health sciences and analytical chemistry
Dublin

- Located in Dublin, Ireland (Greater Dublin Area: pop. 1.6M)
- Founded in 841 AD
- Voted “best capital city to live in” in European-wide 2003 survey by BBC
University of Kansas

- Founded in 1866
- Student population is approx. 30,000
- Approximately 50 faculty in Chemistry and Pharmacy
- Multidisciplinary and international programs
- Strengths in organic, medicinal and bioanalytical chemistry
- Previous existing collaborations/exchange with DCU in analytical chemistry
University of Arkansas

- Founded in 1871
- Student population approximately 19,000
- Approximately 30 faculty in chemistry and biochemistry
- Multidisciplinary and international programs
- Strengths in organic and analytical chemistry
Atlantis Program

• Funding for one year of study abroad for undergraduates

• Students obtain a dual Bachelor Degree in Chemistry (Atlantis Chemistry Degree) between the University of Regensburg or Dublin City University and the University of Kansas or the University of Arkansas

• The degree allows the direct admission to PhD programs in Ireland, the US or in Germany*

* One year Masters then Ph.D.
Atlantis Program

• In addition to required coursework, students can take language classes

• Students also work on a research project with a faculty mentor in one of the following focus areas:
  – Drug development/combinatorial chemistry
  – Green chemistry/environmentally beneficial catalysis
  – Nanotechnology or sensors
  – Bioanalytical chemistry
US students with Professor Paraic James at DCU
European Students Eligibility

- European students are required to study one semester at a different European University (e.g. under the Socrates/Erasmus program) and one year (2 semesters, minimum 10 months) either at the University of Kansas or at the University of Arkansas.
- The study stay at the US institution is intended to be in the 4th year of the Atlantis curriculum.
- Students who want to transfer to the Atlantis degree and to apply for fellowships to start their study stay in the US in September/October should have finished their third year in a Bachelor Curriculum Chemistry in summer and should have studied one semester at a European University other than in the country of their current home institution.
US Student Eligibility

• US-students within the Atlantis Chemistry Curriculum will study in their 3rd or 4th year one semester at Dublin City University and one semester at the University of Regensburg.
• Fellowships for study stays at the European institution are available starting September/October.
• Fellowships are $1,000/month up to $12,000/yr
• Applications due in March
Program Overview: US Students

- Study abroad program funded by US Dept. of Education in partnership with European Commission
- Two semesters abroad in Germany (Regensburg) and Ireland (Dublin)
- Dual Bachelor of Science in Chemistry degree from KU and Regensburg upon successful completion
Cultural Exchange

KU student Katie Remely experiencing the Bavarian culture
Students: 2010-2011

US
2 students from KU are being sent to DCU/UREg
5 students from UArk are being sent to DCU/UREg

Europe
1 student from DCU is being sent to KU
1 student from DCU is being sent to UArk
No students from Regensburg are being sent to KU
4 students from Regensburg are being sent to UArk
Curriculum for KU students

- Earn credit in required courses for KU Chemistry BS degree
- Special opportunities for training and research
  - Drug development/combinatorial chemistry
  - Green chemistry/environmentally beneficial catalysis
  - Nanotechnology
  - Sensors
  - Bioanalytical chemistry
- Elective classes in language and cultural instruction
Research Collaborations

I. Huber (reg) presents research to both sides of the Atlantic
Financial Aid

- $12,000 stipend/year for travel/living expenses
- Limited supplemental scholarships available
- Available to KU students who qualify for other forms of financial aid/scholarships
Faculty Exchange

• In the grant there are funds allocated for faculty to travel to the participating universities
• Faculty exchange consists of short courses and seminars along with meeting with the students and faculty
• This often leads to collaborations and graduate student exchange
Students on a trip in Ireland
American Students in Regensburg
Jonas Bloedt: University of Regensburg
• Came to KU in Fall 2008
• Joined my group to work on microfluidics and clinical diagnostics
• Wrote a bachelor thesis for his degree on his research
• Graduated with a degree from KU in spring of 2009
• Currently working on a Masters/Ph.D. with Professor Matisyk at University of Regensburg; potential collaborative projects
Emer Duffy: DCU

- Came to KU in fall of 2009
- Joined my group to work on in vivo sensors based on microdialysis and microchip electrophoresis
- Needs one more year at DCU to graduate from KU
- Returned to Dublin this month; intends to pursue research with Malcolm Smyth, Fiona Regan, Brett Paul or Dermott Diamond
Additional Collaborations

• Emilie Mainz to Tyndall University in Cork; visited University of Regensburg
• Graduate student exchange to DCU
• New faculty collaborations resulting from faculty and student exchanges
Conclusions

- Great program that encourages international understanding and cooperation
- Some problems with synching the “liberal arts” focus of US education with the more specialized European educational system
- US students take chemistry classes while European students take mostly CLS requirements
- Language can be an issue with US student going to Germany
- Great opportunity to see the world
Acknowledgments

- Professor Jeff Aube
- Cady Bush
- Professor Oliver Reiser
- Professor Fiona Regan
- Professor Pariac James
- Professor Matysik
- Jonas Bloedt
- Emer Duffy
- EEU and Department of Education
Thank you for your attention!

Jonas’ recruiting slide…

• Short Info about the ATLANTIS program:
• KU students can go to DCU (Dublin, Ireland) and University of Regensburg, Germany
• Funded with $1000 per month
• Drinking age in Germany: 16 years
EU Atlantis Program

Transatlantic Dual Bachelor of Science Degree in Chemistry