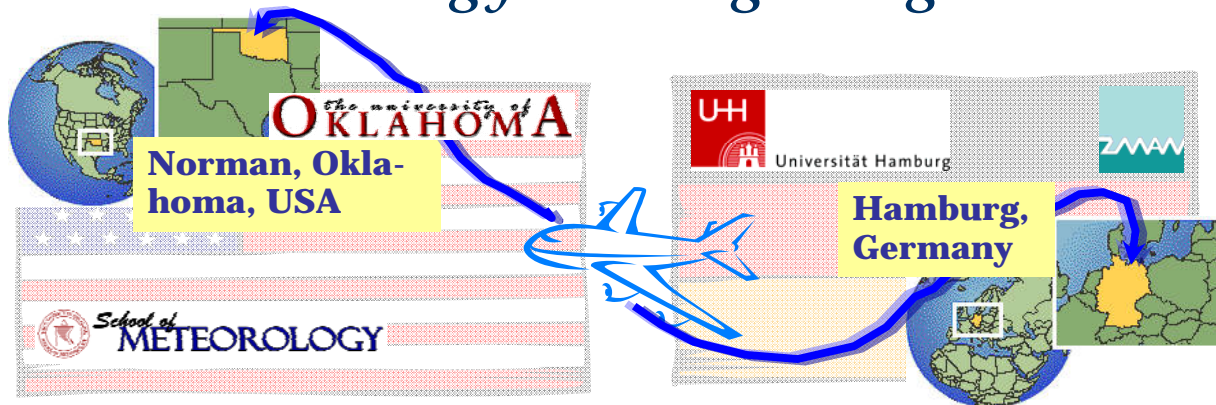


# Meteorology Exchange Program



## About the Exchange Program

It is important for meteorologists to have an understanding not only of their regional weather and climatic conditions, but also of these conditions around the world. This increased knowledge results in further understanding of meteorological principles and the ability to apply them in different conditions. To help achieve this goal, in 2004 an exchange program between the University of Oklahoma, USA and University of Hamburg, Germany was created in an effort to give students first-hand

experience of meteorology in another country, and the possibility to study a foreign language. Both the University of Oklahoma and University of Hamburg are leading institutions in the field of meteorology in their respective regions. The 6-month exchange typically takes place in the junior year for OU students and 3<sup>rd</sup> year for Hamburg students. Exchanges during the Master-Phase or PhD-Phase are also envisaged. They require individual arrangements.

## About the Universities

**The University of Hamburg** is located in the centre of Hamburg, the second largest city of Germany with 1.7 million inhabitants. Hamburg University has identified atmospheric science as one of the university's priority research areas. The Meteorological Institute at the University of Hamburg is one of the largest academic units for meteorology in Germany. It is a member of the Center for Marine and Climate Research (ZMAW), and closely linked to the Max Planck Institute for Meteorology. Together with the German Computer Center for Climate Research (with which we share the building), the Institute is equipped with up-to-date computers ranging from a NEC Super Computer to ordinary PCs. As the only meteorological institute in Germany, a laboratory with several boundary layer wind tunnels equipped with advanced instrumentation is operated. Hamburg University has a comprehensive atmospheric science program, and offers a wide range of subjects in meteorology and climatology. Courses teach essential meteorological theory and may have an experimental component that gives students practical experiences.

**The University of Oklahoma** is located in Norman, Oklahoma, close to Oklahoma City. It has one of the top comprehensive meteorology programs in the United States, with both an undergraduate degree leading to careers in meteorology and a large graduate research program. The School of Meteorology (SoM) has numerous alliances with some of the leading research institutions in the American meteorological community. The University hosts the Center for Analysis and Prediction of Storms (CAPS), the Co-operative Institute for Mesoscale Meteorological Studies (CIMMS) and the Oklahoma Climate Survey (OCS), whose faculty also teach in the School of Meteorology. These research centers and the OU SoM are all housed in the National Weather Center (NWC), along with the government meteorology organizations based in Norman, including the National Severe Storms Laboratory (NSSL), the Storm Prediction Center (SPC) and several National Weather Service groups. The NWC gives the SoM and its students the maximum benefits of having an extensive local base of some of the best meteorological groups in the country

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## *Approved Exchange Courses*

The OU School of Meteorology and the Meteorological Institute, University of Hamburg, have agreed on the following subjects and courses as a basis for exchanges of their students:

### **Oklahoma Year-3 Undergraduates at Hamburg**

Due to the differences in the academic calendar in Hamburg and at OU, OU students are advised to visit Hamburg during the German Spring/Summer (roughly 04/01-07/15) term. They should choose at least 4 subjects\* from the following list.

#### *Hamburg Spring/Summer Semester*

63-515 – Atmospheric Thermodynamics (Lectures)  
63-515a – Atmospheric Thermodynamics (Exercises)  
63-506 – Turbulence and Boundary Layer (Lectures)  
63-506a – Turbulence and Boundary Layer (Exercises)  
63-523 – Optics, Radiation, Remote Sensing (Lectures)  
63-523a – Optics, Radiation, Remote Sensing (Exercises)  
63-522 – Theoretical Meteorology (Lectures)  
63-522a – Theoretical Meteorology (Exercises)

#### *Some possible electives*

63-562 - Seminar and Excursion “Atmospheric Boundary Layer”. The excursion is in summer to the island of “Fehmarn” off the German Baltic Coast.  
63-510 – Synoptics (Exercises)  
63.566 – Planet Simulator Workshop. Students will get hands-on experience with a global model.  
63.555 - Introduction to Mesoscale Modeling  
63.564 – Urban Climatology

\* **Subject choices should be discussed with liaisons and advisors to assure suitability.** Exchange students visiting the University of Hamburg should have basic knowledge in German since most courses at undergraduate level are taught in German. However, English serves as a second language. Staff and students in Hamburg are more or less fluent in English. Most textbooks are in English, and exams can be taken and reports can be written in English

### **Hamburg Year 3 Students at OU**

Due to the differences in the academic calendar in Hamburg and at OU, University of Hamburg students are advised to visit Norman during the Fall (roughly 08/20-12/20) term. They should choose at least 4 subjects\* from the following list.

#### *OU Fall Semester: August-December*

METR 3213 - Physical Meteorology I: Thermodynamics  
METR 3613 - Meteorological Measurement Systems  
MATH 3113 - Introduction to Ordinary Differential Equations  
METR 4133 - Atmospheric Dynamics III  
METR 4303 - Statistical Meteorology  
METR 4233 - Physical Meteorology III: Radiation & Climate  
METR 4424 - Synoptic Meteorology Laboratory  
METR 4330 – Info. Technology Skills  
METR 4911/4922 - Senior Seminar

#### *Some possible graduate-level courses:*

METR 5113 - Advanced Atmospheric Dynamics I  
METR 5233 - Cloud Physics  
METR 5243 - Atmospheric Electrodynamics (every 2. years)  
METR 5803 – Special Topics

## *Additional Information*

Contact the student liaisons or go to <http://www.mi.uni-hamburg.de> for information on the University of Hamburg's and <http://weather.ou.edu> for information on the University of Oklahoma's meteorology program.

### *Recent University of Oklahoma/Hamburg University Student Exchanges*

August – Dec. 2004: Irina Ebbers, Kathrin Riemann and Björn Fock spend one Semester at OU.  
August – Dec. 2005: Peter Hoffmann, Anja Ludwig, Kerstin Schmidt and Nadine Schneider spend one Semester at OU.  
January - July 2006: Troy Christensen spends one semester at Hamburg.  
August – Dec. 2006: Kristin Mielke, Anna-Lisa Schmager, Michael Sujatta and Jeremy Sack spend one Semester at OU.  
August – Dec. 2007: Eileen Dahms, Denise Hertwig, David Bröhan and Andreas Miller spend one Semester at OU.  
August – Dec. 2008: Stefanie Grünwald and Amelie Tetzlaff spend one Semester at OU.  
August – Dec. 2009: Dagmar Popke, Martin Dörenkämper and Richard Schmitt spend one Semester at OU.  
January - July 2010: Chase Rhoades spends one semester at Hamburg.  
August – Dec. 2010: Anne Philipp, Heiner-Matthias Brück spend one Semester at OU.  
January - July 2011: Genna Langum, Natalye Lahart spend one semester at Hamburg.  
August – Dec. 2011: Tobias Becker, Thilo Janssen, Jobst Müsse, Friedrich Richter spend one Semester at OU.

### *Application Process for OU-Students*

Applications and selections for the Education Abroad programs are handled by the School of Meteorology (SoM) and OU's Education Abroad Program (<http://www.ou.edu/intprog/ea/index.html>). SoM applicants must have a 3.0 GPA and must normally have passed the SoM "Introduction to Meteorology" sequence (METR2013/2023) with grades of B or better. A general information session about all SoM exchange programs and the application process will be held at the beginning of the Fall semester, typically as an METR3613 Help Session and/or OUSCAMS meeting devoted to this topic. All students interested in any of the SoM exchange programs are urged to attend this session, as representatives from the Education Abroad office and current/previous students from the exchange programs will be available. Application materials will be handed out during this session, but can also be picked up at the SoM office or from the SoM liaisons (Dr. Peter Lamb – Reading; Dr. Petra Klein – Hamburg; Dr. Fred Carr – Monash).

Interested students should then fill out the application package (including an essay and 2 recommendation letters) and return it to the SoM liaison with whom they will then schedule an interview. Based on the application material and the interviews, the SoM will forward the application package together with a formal recommendation to the Education Abroad office, which will review all materials and make decisions about the acceptance of the applicants. It is important to note that applicants must complete the SoM application and interview process first. Applications without the SoM recommendation letter are not accepted by the Education Abroad office. **Application materials must be submitted to the SoM liaison by Sept. 15 and the interview process must be completed before September 20. The deadline for submission of all materials to the Education Abroad office is September 30.** A decision by Education Abroad is made shortly after that, and a final decision is made by the SoM by November 1. Students performing poorly in their fall courses may cause a reversal of an initial favorable decision.

### *Costs and Housing*

Participants enroll full-time in *INTL* hours, paying OU tuition at the same rate as they would on campus. This total includes all standard fees, plus a ten dollar per credit hour fee assessed by the Education Abroad office each semester. Students are responsible for pre-departure (e.g. passports and housing deposits) and transportation costs, as well as living expenses while abroad. Financial aid, loans, grants and scholarships can all be applied to cover the costs of studying abroad.

The housing in Hamburg is arranged by the Meteorology department in Hamburg and in most cases students will live in a university-sponsored dormitory (single room, but shared kitchen and bathroom facilities). The average housing costs for a dormitory room will be around €300/months (currently about \$390/months). Other options may be available but must be arranged on an individual basis. Participation in intensive language courses (January-March) in German is supported through a project funded by the German Academic Exchange Services (DAAD).

### *ILREUM Research and Travel Fellowships*

Through the NSF-Career award ILREUM of Dr. Petra Klein ([pkklein@ou.edu](mailto:pkklein@ou.edu)), a unique opportunity exists for students interested in urban meteorology to receive fellowships supporting their participation in the academic exchange program. Every year at the beginning of the fall semester, four undergraduate (UG) students in their junior year will be selected as ILREUM UG fellows. During fall, these fellows will be mentored by Dr. Klein on a research project in urban meteorology and receive a research fellowship. The expected work load is 8h/week for a total of 12 weeks and the pay rate is \$10/h (total amount awarded ~\$960). During the junior-year spring semester the ILREUM UG fellows will then travel to either Hamburg or Reading and will continue working on a urban meteorology research project while being abroad. After successful completion of their research projects and study abroad, the UG ILREUM fellows will then be awarded a \$1000 travel fellowship to present their results at the student's conference of the AMS annual meeting, which is typically held in January or February of their senior year.

It is important to note that this is a structured program and once selected as ILREUM UG fellows, students are expected to participate in all three components of the program (research project at OU during fall of junior year, study abroad in Reading or Hamburg during spring junior year with continuation of research project, presentation of results at AMS meeting in spring of senior year). Only due to unexpected medical or personal reasons, recipients of the ILREUM research fellowships can decline to study abroad in the following semester. Students interested in the ILREUM undergraduate research option must follow the application procedures for study abroad as described above in the section titled "Application Process". However, in addition to the standard application forms they will need to fill-out an additional 1-page form with questions specific to the ILREUM fellowships.

### *Application Process for UH-Students*

The application process starts usually in the 1<sup>st</sup> week of April with a meeting which informs about all the exchange programs the Meteorological Institute is part of. Potential exchange students are requested to write an application letter which details their motivation, gives information about their language abilities and on the marks they received so far. Attached to this letter are a Curriculum Vitae and a copy of the final High School certificate. Applications are sent to the Meteorological Institute (Prof. Schatzmann). With respect to OU applicants the selection will be carried out in close contact with Prof. Klein (SoM, Norman) and OU's International Office. Since the program is presently sponsored by DAAD, only students with marks clearly above average have a realistic chance to be accepted.

Additional information can be found at the homepage of the Meteorological Institute under <http://www.mi.uni-hamburg.de/Auslandsaufenthalte.5964.0.html>.