

# José Manuel Gálvez

Graduate Research Assistant and PhD Candidate (ABD)  
at the University of Oklahoma

## Contact and Personal Information

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**Citizenship:** Peruvian

### **Some References:**

(1) Dr. Petra M. Klein. Email: pkklein@ou.edu. Telephone: (405) 325-1631

(2) Dr. Alan Shapiro. Email: ashapiro@ou.edu. Telephone: (405) 325-6097

(3) Dr. Evgeni Fedorovich. Email: fedorovich@ou.edu. Telephone: (405) 325-1197

## EDUCATION AND PROFESSIONAL CERTIFICATION

- **Since 01/2007 - PhD Candidate at the University of Oklahoma, Norman, OK, USA**

As described in the above, current efforts are devoted towards a doctoral degree in meteorology. Both PhD. Qualifier Examination and PhD. General Examination were passed on Aug.2007 and Dec.2008. Defense and graduation scheduled for March and May 2011.

- **06/2008 - Les Houches Summer School in Atmospheric Boundary Layers, France**

Summer school on Concepts, Observations and Numerical Simulations of the Atmospheric Boundary Layer. Carried out at Les Houches, France during 17-27 June 2008. Website: <http://www.phys.uu.nl/~dop/summerschool/home.html>.

- **12/2005 - M.S in Meteorology at the University of Oklahoma, Norman, OK, USA**

Thesis title: 'Modulation of Rainfall by the South American Altiplano Lakes'. Under the supervision of Dr. Michael Douglas. Research focused on understanding the mechanisms that favored or suppressed lake-effect convective storms over Lake Titicaca.

- **06/2000 - Numerical Weather Prediction Course, Weather Service, Lima, Peru**

Successful completion of a 9-month Course carried out in Peru's National Weather Service (SENAMHI) as part of the project "Mejoramiento de la Capacidad de Pronóstico para la Prevención y Mitigación de Desastres en el Perú". Lima, Peru.

- **12/1999 - B.S. in Meteorology at Universidad Nacional Agraria La Molina, Lima, Peru**

Obtained the second highest GPA-equivalent grade within the Science Faculty Graduates; highest in meteorology.

## CURRENT EMPLOYMENT (as of Feb.2011)

**Candidate for a Doctoral Degree in Meteorology at the University of Oklahoma (ABD).  
Graduate Research/Teaching Assistant since 2007. Expected graduation: May 2011.**

Doctoral research focuses on investigating the role of the urban canopy on the turbulent transfer of heat and momentum inside the urban roughness sub-layer. It also explores whether scintillometry can be considered a reliable approach to study this particular process. The approach is mainly based on sonic anemometer and scintillometer observations organized in three field campaigns. Work included active participation on the design, development and execution of the campaigns; and on the data management and analysis. Aside from the doctoral research, efforts have concentrated on teaching the laboratory sessions of METR3613 "Meteorological Measurements" (a junior-level class) during three (3) semesters. Teaching a METR1014 "Introduction to Weather and Climate" laboratory is scheduled for the Spring of 2011. Supervisor: PhD. Petra Klein.

## PREVIOUS EMPLOYMENT AND PROFESSIONAL EXPERIENCE

- **08/2002-06/2007, Graduate Research Assistant.** Location: Cooperative Institute of Mesoscale Meteorology Studies (CIMMS) and the University of Oklahoma (OU), Norman, Oklahoma, USA. Worked with observations gathered during the South American Low Level Jet Experiment (SALLJEX 2002-3) and the Panamerican Climate Studies Sounding Network (PACS-SONET 1996-2005), with satellite data, and numerical simulations using the WRF model. Masters thesis work focused on understanding the mechanisms involved on rainfall variability over the South American Altiplano with an emphasis in nocturnal lake effect storms. As a research assistant, also participated on the SALLJEX and NAME (North American Monsoon) field campaigns and on different research activities related to these. Supervisor: PhD. Michael W. Douglas.
- **01/2000-06/2002, Research Scientist.** Location: Instituto Geofísico del Perú (Geophysical Institute of Peru), Climate and Weather Prediction Area, Lima, Peru. Worked with the MM5 Model and with weather and climate data with a focus on El Niño and on Rainfall in the Central Andes. Also worked on realtime weather and climate forecasts for Peru. In charge of the site: <http://www.met.igp.gob.pe>. Supervisor: PhD. Pablo Lagos.
- **01/2001-06/2001, Visiting Scientist:** Location: Department of Meteorology on the Pennsylvania State University, Pennsylvania, USA. Funded by Instituto Geofísico del Perú. Worked with Model MM5 and simulations on the Peruvian territory during 6 months. Supervisor: PhD David R. Stauffer.
- **01/1999-06/1999, Probation Scientist:** Location: Instituto Geofísico del Perú (Geophysical Institute of Peru), Climate and Weather Prediction Area, Lima, Peru. Learned UNIX, Grads, Fortran, MM5 and helped with articles published on the website. Supervisor: PhD. Pablo Lagos.

## TEACHING EXPERIENCE

- **2010 Fall Semester, OU METR3613 LABORATORY INSTRUCTOR (Duration: 4 months)**  
Taught three (3) sections (~40 junior-level students) of Meteorological Measurements Laboratory (METR3613, University of Oklahoma). The laboratories include hands-on experiments such as the development of simple circuits, calibration of wind vanes, checking of thermistor calibration, determination of thermistor time constants and raingauge calibration. Short field experiments and student presentations are also included. The theory section was organized and taught by Petra Klein ([pkklein@ou.edu](mailto:pkklein@ou.edu)).
- **2008 Fall Semester, OU METR3613 LABORATORY INSTRUCTOR (Duration: 4 months)**  
Taught two (2) sections (~35 junior-level students) of Meteorological Measurements Laboratory (METR3613, University of Oklahoma). See the above for description.
- **2007 Fall Semester, OU METR3613 LABORATORY INSTRUCTOR (Duration: 4 months)**  
Taught three (3) sections (~55 junior-level students) of Meteorological Measurements Laboratory (METR3613, University of Oklahoma). See above.
- **2007 Spring Semester, OU METR3123 GRADER (Duration: 4 months)**  
Homework Assignment grader for about 50 junior-level students. Atmospheric Dynamics II (METR3123, University of Oklahoma). Main professor: Alan Shapiro ([ashapiro@ou.edu](mailto:ashapiro@ou.edu)).

## GUEST LECTURES

- **08/2009, OU-GTAO GUEST LECTURER (Duration: one 45-min lecture)**  
One-time guest lecturer during a 45-minute session during the General Teaching Assistant Orientation (University of Oklahoma). Topic: Incorporating writing in teaching.
- **03/2009, GEOG1103 GUEST LECTURER (Duration: one 45-min lecture)**  
One-time guest lecturer during a 45-minute session in Human Geography (GEOG1103, University of Oklahoma). Topic: The Geography of Peru.
- **2007, 2008, 2010, METR3613 GUEST LECTURER (Duration: 3 45-min lectures in total)**  
Three-times guest lecturer during 45-minute sessions in Meteorological Measurements (METR3613) at the University of Oklahoma. Topic: Upper Air Measurements.

## PROFESSIONAL SKILLS

### Languages:

- Spanish: Fluent (native)
- English: Fluent (written and oral)
- French: Proficient (oral especially)
- Portuguese: Familiar (oral especially)
- German: Basic (written and oral)

### Computing skills:

- Proficient in MS-Office tools (e.g. Excel, Powerpoint, Word).
- Programming & Data Analysis Tools: Proficient in IDL and GRADS; Familiar with FORTRAN and Kornshell (in UNIX or LINUX); Basic experience with Matlab.
- Website development: Proficient in HTML; Basic Java.
- Graphic Design: Proficient in PHOTOSHOP and COREL DRAW, as well as related tools.
- Video and media editing: Proficient at Sony Vegas Studio.
- Operating Systems: Familiar with Windows, Linux and UNIX.
- Numerical Modeling: Familiar with MM5 and WRF Models.
- Creative and able to merge different skills to produce results.

### Field Experiment Experience:

- Familiar with organization and development of meteorological field experiments. Participated in:
  - Huamantanga-Valle de Canta, Peru** (Collaboration, Jan 1997);
  - La Molina, Lima, Peru** (Self funded, May-July 1997); ;
  - San Ignacio, Bolivia** (OGP-NOAA-SALLJEX, Feb.2002);
  - Salar de Uyuni, Bolivia** (OGP-NOAA-SALLJEX, Nov.2002);
  - Lake Titicaca, Bolivia-Peru** (OGP-NOAA-SALLJEX, Jan.2003);
  - Santa Cruz, Bolivia** (OGP-NOAA-SALLJEX, Jan.2003 IOP);
  - Northwest Mexico** (OGP-NOAA-NAME, May-Aug.2004);
  - Senegal-Guinea-Mali** (OGP-NOAA-NAMMA, Jul-Aug.2006);
  - Suburban Norman, OK #1** (NSF-ILREUM, Aug-Sep.2007);
  - Urban Lima, Peru** (Self-funded; Jan-Feb. 2008);
  - Suburban Norman, OK #2** (NSF-ILREUM, May-Sep.2008);
  - Oklahoma MICRONET, Norman, OK** (Aug.2007-Feb.2010)
  - Urban Norman, OK** (NSF-ILREUM, Jun.2009 – Aug.2010);
  - FluxSAP, Nantes, France** (CNRS-ILREUM, May 2010)
  - NWC Roof, Norman, OK** (NSF-ILREUM, Sep.2010 - ongoing).
- Upper air measurements experience: operation of radiosondes, tethered sondes & pilot balloons.
- Boundary-layer measurements: Participated on the configuration and operation of RMYoung and Campbell Scientific sonic anemometers; a SCINTEC displaced beam short aperture scintillometer; temperature and relative humidity sensors; Campbell Scientific dataloggers. Design and implementation of roof masts including temperature, radiation and wind sensors. Familiar with the use of solar panels and batteries to power instrumentation masts.

### Media and artistic skills:

- Display of information through webpage and graphic design, photography and film (including video editing), focused on the development of teaching material.
- Development of cartoons and animations, generally applied to science education.
- Drawing/painting (acrylics, oil, watercolor, digital); Music composition/performance (piano, guitar).

### Leadership and organizational skills:

- Member and co-founder of SOPECIA (Sociedad Peruana de Ciencias Atmosfericas).
- Secretary of the PSA (Peruvian Student Association) of the University of Oklahoma (2009-10).
- Organization of the First Peruvian Cultural Night at the University of Oklahoma (6-November 2009). 2-hour-long show and banquet. Attendance: 300 people.

### Experience/interest relevant to research in the Great Lakes region:

- PhD research concentrates on Boundary-Layer Meteorology.
- Masters work concentrated on Lake-effect convective storms over Lake Titicaca (Peru/Bolivia).
- Life-time interest in Physical Geography. Experience with world climatology.

## PUBLICATIONS AND SIGNIFICANT DOCUMENTS

1. **12/2010:** Galvez, J. M., P. K. Klein and S. C. Arms, 2010: "Scintillometer measurements of a sub-urban site in the Southern Great Plains of the United States" **To be submitted to the *Boundary-Layer Meteorology Journal***. 20pp.
2. **12/2009:** Galvez, J. M.: "Experimental and Numerical Studies of Turbulent Transfer in the Urban Roughness Sublayer: Observations and their Application to Improve an Urban Boundary Layer Parameterization Scheme Implemented into the WRF Model." **PhD Research Prospectus**. School of Meteorology, University of Oklahoma. Norman, OK. 75pp.
3. **12/2005:** Galvez, J. M.: "The Modulation of Rainfall by the South American Altiplano Lakes." **Masters Thesis**. School of Meteorology, University of Oklahoma. Norman, OK. 101 pp.

## CONFERENCE TALKS

1. **08/2010:** Galvez, J.M., P.M. Klein, S. C. Arms and B. L. Bridges: "Observational studies of turbulent transfer processes across the urban canopy". **Oral Presentation and Extended Abstract**. AMS Ninth Symposium on the Urban Environment. Keystone, CO, 1-6 August 2010.
2. **01/2009:** Galvez, J.M., P.M. Klein and S.C. Arms: "Scintillometry applied to urban studies: evaluation of scintillometer measurements made at a sub-urban site". 89<sup>th</sup> AMS Annual Meeting, theme: "Urban Weather and Climate: Now and the Future". **Oral Presentation**. J3.2. Phoenix, AZ, 10-15 January, 2009.
3. **06/2008:** Galvez, J.M., P.M. Klein and S.C. Arms: "Turbulent heat fluxes in the atmospheric surface layer: comparison of scintillometer measurements with eddy-covariance and gradient methods". **Oral Presentation**. AMS 18<sup>th</sup> Symposium on Boundary Layers and Turbulence, 10A.3. Stockholm, Sweden, 9-13 June, 2008.
4. **06/2005:** Galvez J. M. et al: "Measuring and monitoring the mesoclimate of tropical locations: field observations from the South American altiplano during the SALLJEX." **Oral Presentation**. AMS 13<sup>th</sup> Symposium on Meteorological Observations and Instrumentation, 6.2. Savannah, GA, 20-24 June 2005.

## POSTERS, EXTENDED ABSTRACTS AND CONFERENCE ATTENDANCE

1. **06/2009:** Galvez, J.M., S.C. Arms and P.M. Klein: "Innovative Laboratory for Research and Education in Urban Meteorology (ILREUM)". **Poster**. 2009 Unidata Users Workshop: "Using operational and experimental observations in Geoscience Education." UCAR, Boulder, CO, 8-12 June 2009.
2. **04/2006:** Galvez, J.M., Raquel K. Orozco, Carmen R. Reyes and Michael W. Douglas: "Observed diurnal circulations and rainfall over the altiplano during the SALLJEX." **Poster and Extended Abstract**. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, 2006.
3. **05/2008:** "Observing the Turbulent Atmosphere: Sampling Strategies, Technology and Applications". NCAR Workshop. NCAR Mesa and Foothills Laboratory, Boulder, CO. **Attendance only**.
4. **04/2006:** Galvez, J.M. and Michael W. Douglas: "Modulation of rainfall by Lake Titicaca using the WRF model." **Poster and Extended Abstract**. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
5. **04/2006:** Galvez, J.M. and Michael W. Douglas: "Northward propagating surges east of the Andes during the SALLJEX." **Poster and Extended Abstract**. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
6. **04/2006:** Raquel K. Orozco, John F. Mejia, Jose M. Galvez and Michael W. Douglas: "Plausible effects of Paleolake Tauca on the altiplano circulations and rainfall from WRF model simulations." **Poster and Extended Abstract**. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
7. **04/2006:** Michael W. Douglas, John F. Mejia and Galvez, J.M.: "Accuracy of the NCEP Global Tropospheric Analysis (FNL) over Central South America based upon upper air observations collected

during the SALLJEX.” **Extended Abstract.** 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.

**8. 01/2006:** Galvez, J.M. et al.: “Diurnal variability of the cloud field over the VOCALS domain from GOES imagery.” **Poster AND Extended Abstract.** 86th AMS Annual Meeting, P1.3. Atlanta, GA, 2006.

**9. 01/2006:** Douglas, M.W. et al.: “The seasonal evolution of the diurnal variation of the low-level winds around the Gulf of California. Is there a link to vegetation green-up during the wet season?” **Extended Abstract.** 86th AMS Annual Meeting, P1.3. Atlanta, GA, 28 January – 3 February 2006.

**10. 10/2005:** Galvez J. M. et al: “The WRF model as a tool to understand mesoscale processes over the poorly-sampled South American altiplano.” **Poster and Extended Abstract.** AMS 11th Conference on Mesoscale Processes, P2M.4., Albuquerque, NM, 22-29 October 2005.

**11. 06/2005:** M. W. Douglas, Javier Murillo, J. M. Galvez, J. F. Mejia, R. Orozco and C. Brown, 2005: “Quality control of pilot balloon data for climate monitoring.” **Poster and Extended Abstract.** AMS 15th Conference on Applied Climatology/13th Symposium on Meteorological Observations and Instrumentation, JP1.30. Savannah, GA, 20-24 June 2005.

**12. 06/2004:** Michael W. Douglas, Javier Murillo, John F. Mejia and Jose M. Galvez, 2004: Monitoring the Variability of Atmospheric Circulations in Latin America with the Pan American Climate Studies Sounding Network. Clivar Meeting 2004. The first International CLIVAR 2004 Science Conference, June 21-25, 2004 in Baltimore, Maryland, USA.

**13. 09/2003:** Michael W. Douglas and Jose M. Galvez: “A Simple Raingauge Network for the SALLJEX.” **Poster.** CLIVAR PANAM Meeting. Boulder CO, September 2003.

**14. 09/2003:** Michael W. Douglas, John F. Mejia, Javier Murillo, Jose Galvez: “LLJ structure from NOAA WP-3D measurements during the SALLJEX.” **Poster.** CLIVAR PANAM Meeting. Boulder, CO, Sep. 2003.

**15. 01/2003:** Michael W. Douglas, Javier Murillo, John F. Mejia, and Jose Galvez: “New directions in the Pan American Climate Studies Sounding Network for Latin America.” **Extended Abstract.** Eighth Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface. The 84th AMS Annual Meeting (Seattle, WA), 4.4.