

College of Science Board of Trustees Report September 30-December 15

Will Setzer (Professor and Chair of Chemistry) was invited to attend the 2nd Research Network Natural Products against Neglected Diseases (ResNet NPND) Scientific Meeting and Workshop November 25-28, Rio de Janeiro, Brazil

Presented a talk, "Antileishmanial activities of cloudforest plants from Monteverde, Costa Rica". Note: Only two scientists from North America received invitations to this conference; the other was Will Setzer's former Ph.D. student, Victor Ogungbe, who is currently Assistant Professor at Jackson State University.

UAH Space Science Professor was Team Leader on ISSI Research Team

Prof. N.V. Pogorelov was a Team Leader on an International Space Science Institute (ISSI, Bern, Switzerland) research team "Heliosheath Processes and Structure of the Heliopause: Modeling Energetic Particles, Cosmic Rays, and Magnetic Fields," which had its final meeting at ISSI on November 17-20, 2014

UAH Space Science Professor and Chair Gary P. Zank is now a "Series Editor of the Springer-Verlag book series Lecture Notes in Physics".

UAH Space Science Graduate Student Successfully Defends Master's Thesis

Mr. Jinlei Zheng successfully completed the oral defense of his Master's thesis on Oct. 23, 2014 under the supervision of Dr. Qiang Hu at Department of Space Science and CSPAR. The title of Mr. Zheng's thesis is "Transverse and compressional hydromagnetic waves in the Earth's magnetosphere". Mr. Zheng is expected to fulfill all the requirements for the degree of Master of Science at the end of the Fall 2014 semester.

UAH Space Science Assistant Professor Attended The 13th Quadrennial Solar-Terrestrial Physics Symposium in Xi'an China

Dr. Qiang Hu, an Assistant Professor at the Department of Space Science and CSPAR, attended the 13th Quadrennial Solar-Terrestrial Physics Symposium in Xi'an China, Oct. 12-18, 2014. This is the thirteenth in the series of Solar-Terrestrial Physics Symposia organized by the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) and held approximately every four years. Dr. Hu presented a talk entitled "Magnetic field-line twist and lengths inside interplanetary flux ropes" and will be the lead editor for the forthcoming conference proceedings to appear in the Journal of Geophysical Research published by the American Geophysical Union (AGU).

UAH Space Science Graduate Students Attended The 2014 APS Division of Plasma Physics Annual Meeting

Graduate student **Xiaocan Li** (advisor: Gang Li) attended the 2014 APS Division of Plasma Physics Annual meeting, held on October 27-31, New Orleans, Louisiana and presented a poster with title: "On the energy conversion and particle acceleration during magnetic reconnection". He was also awarded the DPP Student Travel Grant Award

UAH Space Science Professor Attends The L5 Symposium

Gang Li attended the L5 symposium held on Dec. 2nd-4th, Boulder, and presented a talk with title: "Inferring large scale U-shape magnetic field topology between two CIRs"

UAH Space Science Professor Attends "Non-thermal Ions in Space and Laboratory Plasmas" at the Annual Meeting of the American Physical Society, Division of Plasma Physics

Professor N.V. Pogorelov organized a mini-conference "Non-thermal Ions in Space and Laboratory Plasmas" at the Annual Meeting of the American Physical Society, Division of Plasma Physics, October 27-31, 2014, New Orleans, LA. The conference was attended by leading scientists from both space physics and fusion communities who discussed the importance of non-thermal ions and mathematical approach to study their transport using kinetic algorithms.

UAH Space Science Professor Gives Talk on Turbulence in the Heliosphere

Prof. N.V. Pogorelov gave an invited talk "Turbulence in the Heliosphere" at the International Workshop "Turbulence: In the Sky as on Earth" organized by the International Institute of Physics, Natal, Brazil, October 6-16, 2014.

UAH Space Science Professor and Chair Gives Talk on The Transport of Turbulence throughout the Heliosphere

Gary P. Zank, AstroFit Colloquium SFB 963, Georg-August-University of Göttingen, September 2014

UAH Space Science Professor and Chair Gives Talk on Particle Acceleration Via Reconnection Processes in the Supersonic Solar Wind

Gary P. Zank, Institute of Interplanetary Space Physics, INAF-IAPS, Italy, November, 2014

UAH Space Science Professor and Chair Gives Talk on the Transport of Turbulence throughout the Heliosphere

Gary P. Zank, Institute of Interplanetary Space Physics, INAF-IAPS, Italy, November, 2014

UAH Space Science Professors Editors on Published Book on Numerical Modeling of space Plasma Flows.

Numerical Modeling of Space Plasma Flows: ASTRONUM-2013 (Eds. **N.V. Pogorelov**, E. Audit, and **G.P. Zank**), ASP Conf. Ser.488, Astronomical Society of the Pacific, San Francisco (2014)

UAH Space Science Professor Receives Grant from VPR of the Industry/University Cooperative Graduate Student Research Program

Dr. Gang Li received a grant from VPR of the Industry/University Cooperative Graduate Student Research Program. It will cover stipend and tuition for Mr. Junxiang Hu. The industrial partner is Dr. Parker, a former Ph. D student of Dr. Gary Zank.

UAH Department of Biology and Biotechnology Program Wins 4 out of the 6 Prizes at This Year's 3-Minute Thesis Contest

Aleksandra Pivovarova, a graduate student in the Department of Biological Sciences, took home the top prize in the Master's Category at the third-annual Three Minute Thesis (3MT[®]) competition.

UAH Earth System Science Student Awarded Prestigious Fellowship with the EPA

UAH Earth System Science undergraduate student, **Montana Etten-Bohm**, was awarded a prestigious fellowship with the Environmental Protection Agency which will allow her to study federal regulations on water quality in the southeastern United States.

UAH Earth System Science Graduate Student Selected Winner of Conference of Southern Graduate Schools Thesis Competition

Eric Anderson, Earth System Science Masters graduate, was selected as the winner of the Conference of Southern Graduate Schools Thesis Competition for his thesis "*Analysis of rainfall-triggered landslide hazards through the dynamic integration of remotely sensed, modeled and in situ environmental factors in El Salvador.*"

UAH Students Win First and Second Prize in the Annual Werner von Braun Research Symposium

UAH undergraduate students, **Jeanne le Roux** (Earth System Science major) and **Christopher Phillips** (Atmospheric Science and Physics double major) won first and second prize in the annual Werner von Braun Symposium undergraduate science student poster session.

The UAH American Meteorological Society Student Chapter Awarded Honor Roll

The UAH AMS Student Chapter was awarded Honor Roll for the 2013-2014 chapter years. The chapter will be recognized at the Local Chapter Officers Breakfast at the annual AMS meeting in Phoenix, AZ in January.

UAH College of Science Peer-Reviewed Publications

“Leaf essential oil compositions of *Rudbeckia fulgida* Aiton, *Rudbeckia hirta* L., and *Symphotrichum novae-angliae* (L.) G.L. Nesom (Asteraceae).” Chelsey D. Stewart, Chelsea D. Jones, and **William N. Setzer**. *American Journal of Essential Oils and Natural Products*, 2014, 2(1), 36-38.

“Essential oil composition of *Caperonia palustris* (L.) A. St-Hil. (Euphorbiaceae) growing in southwest Nigeria.” Moses S. Owolabi, Akintayo L. Ogundajo, Isiaka A. Ogunwande, Rebecca M. Hauser, and **William N. Setzer**. *American Journal of Essential Oils and Natural Products*, 2014, 2(1), 39-40.

“Chemical composition and biological activity of *Pulicaria vulgaris* essential oil from Iran.” Javad Sharifi-Rad, Abdolhossein Miri, Seyedeh Mahsan Hoseini-Alfatemi, Majid Sharifi-Rad, **William N. Setzer**, and Abbas Hadjiakhoondi. *Natural Product Communications*, 2014, 9(11), 1633-1636.

“Antileishmanial potential of tropical rainforest plant extracts.” Lianet Monzote, Abel Piñón, and **William N. Setzer**. *Medicines*, 2014, 1, 32-55.

“Interactions of antiparasitic sterols with sterol 14 α -demethylase (CYP51) of human pathogens.” Jasmine Warfield, **William N. Setzer**, and Ifedayo Victor Ogungbe. *SpringerPlus*, 2014, 3, 679.

“Antifungal activity of plant extracts against *Aspergillus niger* and *Rhizopus stolonifer*.” Venkatasachaitanya Surapuram, **William N. Setzer**, **Robert L. McFeeters**, and **Hana McFeeters**. *Natural Product Communications*, 2014, 9(11), 1603-1605.

“Poly(amino acid) block copolymers for drug delivery and other biomedical applications.” **Carmen Scholz**. *Material Matters*, 2014, 9(3), 73-76.

Kim, T.K., Pogorelov, N.V., Borovikov, S.N., Jackson, B.V., Yu, H.-S., Tokumaru, M., MHD

heliosphere with boundary conditions from a tomographic reconstruction using interplanetary scintillation data, *J. Geophys. Res. Space Physics*, 119, 7981-7997 (2014)

Particle Acceleration via Reconnection Processes in the Supersonic Solar Wind, by **G.P. Zank, J.A. le Roux, A. Dosch**, and O. Khabarova, *ApJ*, 797:28, doi:10.1088/0004-637X/797/1/28, 2014.

Instability of the heliopause driven by charge exchange interactions, **K. Avinash, G.P. Zank, B. Dasgupta**, and S. Bhadoria, *ApJ*, 791, 102, doi: 10.1088/0004-637X/791/2/102, 2014

Turbulence Transport Modeling of the Temporal Outer Heliosphere, by **L. Adhikari, G. P. Zank, Q. Hu, and A. Dosch**, *ApJ*, pp. 793:52, doi:10.1088/0004-637X/793/1/52, 2014.

Pickup ion mediated plasmas. 1) Basic model and linear waves in the solar wind and local interstellar medium, by **G.P. Zank, P. Hunana, P. Mostafavi, and M.L. Goldstein**, *ApJ* 97:87, doi:10.1088/0004-637X/797/2/87, 2014

A theoretical perspective on particle acceleration by interplanetary shocks and the Solar Energetic Particle problem, by **Olga P. Verkhoglyadova, G.P. Zank, Gang Li**, *Physics Reports*, <http://dx.doi.org/10.1016/j.physrep.2014.10.004>, 2014.