

JULIO V. URBINA

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EDUCATION

DEGREE	INSTITUTION	YEAR
B.S. (Electronics Engineering)	Universidad Nacional de Ingenieria Lima, Peru	1990
M.S. (Electrical Engineering)	University of Illinois at Urbana-Champaign Urbana, IL	1996
Ph.D. (Electrical Engineering)	University of Illinois at Urbana-Champaign Urbana, IL	2002

PROFESSIONAL ENGINEERING THESIS: *Diseño e implementación de un controlador de radar MST para la Base Antártica Peruana Machu-Picchu* (Design and implementation of an MST radar controller for the Machu-Picchu Peruvian Antarctic Base).

MS THESIS: *System integration and first observations of a space antenna radar at Bondville.*

PHD THESIS: *VHF radar studies of the mid-latitude E-region ionosphere from Camp Santiago, Puerto Rico.*

EXPERIENCE

Visiting Fulbright Scholar (3/2015-7/2015)
 Department of Electrical and Electronics Engineering, Universidad Nacional de Ingenieria, Lima, Peru (Sabbatical semester)

Associate Professor (7/2012 - present)
 Department of Electrical Engineering, Penn State University, PA

Assistant Professor (8/2006 – 6/2012)
 Department of Electrical Engineering, Penn State University, PA

Doctoral Faculty (8/2002 – 8/2006)
 Department of Applied Science, University of Arkansas at Little Rock, AR

Assistant Professor (8/2002 – 8/2006)
 Department of Electronics and Computer Engineering Technology, University of Arkansas at Little Rock, AR

Visiting Scientist (Summers 2005, 2006)
 Space and Atmospheric Sciences Group, Arecibo Observatory, PR

Visiting Lecturer (1/2002-5/2002)
 Department of Electrical Engineering, University of Illinois at Urbana-Champaign, IL

RF Engineer (8/1989-6/1993)
 Jicamarca Observatory, Lima, Peru

Lecturer (4/1990 – 5/1993)

Department of Electrical and Electronics Engineering, Universidad Nacional de Ingenieria,
Lima, Peru

MAIN RESEARCH INTERESTS

Currently, he is an associate professor at Pennsylvania State University in the School of Electrical Engineering and Computer Science. He is also a research professor at the Huck Institutes of Life Sciences, the Institutes of Energy and Environment, the Center for Planetary Systems Science, the Center for Artificial Intelligence and Systems Engineering at the Pennsylvania State University. His research covers electromagnetism, ionosphere, meteors, space and satellite communications, digital systems and space instrumentation, classical radars, cognitive radars, artificial intelligence, communication systems of the future, software- defined radio, drones, harmonic radars, microwave circuits, microwave communication, reconfigurable instrumentation, and radio wave propagation. He also investigates new pedagogies and technologies, to improve university learning, diversity, and social inclusion.

AWARDS AND HONORS

- NASA Group Achievement Award, Center of Excellence, 1998 Coqui II Sounding Rocket Campaign Team (1999)
- International Symposium on Equatorial Ionosphere (ISEA) Student Award (2000)
- Harold L. Olsen Award for Excellence in Undergraduate Teaching by Graduate Students, Department of Electrical and Computer Engineering, University of Illinois at Urbana Champaign (2001)
- The Cosmopolitan Club at the University of Illinois Service Award (2002)
- NSF Career Award Recipient (2011)
- Joel and Ruth Spira Excellence Teaching Award (2014)
- Fulbright Scholar (2015)
- Distinguished Service Award, Penn State/College of Engineering (2016)
- IEEE North Jersey Section MTT/AP-S, EDS/C&S, Chapters Award (2019)

SELECTED PUBLICATIONS

JOURNAL ARTICLES

Margarita M López-Urbe, Julio V Urbina, Alfonso I Mejía, Luis O Duque, Diego Riaño-Jiménez, José Ricardo Cure, Víctor Ramos, Carlos Martel, Jose D Fuentes, Victor H González, Creating a Virtual International Research Experience, *American Entomologist*, Volume 68, Issue 1, Spring 2022, Pages 24–27.

Alzaabi*, O., Al-Khaldi, M. M., Ayotte, K., Penaloza, D., Urbina, J., Breakall, J. K., Lanagan, M., Patch, H. M., & Grozinger, C. M. (2022). Numerical Modeling and Measurement of Apis Mellifera Radar Scattering Properties. *IEEE Geoscience and Remote Sensing Letters*, 19.

Mujeeb, K., Muhammad Faryad, Akhlesh Lakhtakia, and Julio V. Urbina, "Grating-coupled excitation of high-phase-speed Dyakonov surface waves," *J. Opt. Soc. Am. B* 39, 474-480 (2022).

Anandakrishnan, S.; Bilén, S.G.; Urbina, J.V.; Bock, R.G.; Burkett, P.G.; Portelli, J.P. The geoPebble System: Design and Implementation of a Wireless Sensor Network of GPS-Enabled Seismic Sensors for the Study of Glaciers and Ice Sheets. *Geosciences* 2022, 12, 17.

Galindo*, F., Urbina, J., & Dyrud, L. (2021). Effect of neutral winds on the creation of non-specular meteor trail echoes. *Annales Geophysicae*, 39(4), 709-719.

Dinsmore*, R., Mathews, J. D., & Urbina, J. (2021). General resource for ionospheric transient

investigations (GRITI): An open-source code developed in support of the Dinsmore et al. (2021) results. *MethodsX*, 8, [101456].

Amaro-Rivera*, Y., Vargas, F., Huang, T. Y., & Urbina, J. (2021). Unusual Intensity Patterns of OH(6,2) and O(¹S) Airglow Driven by Long-Period Waves Observed Over the Andes Lidar Observatory. *Journal of Geophysical Research: Space Physics*, 126(2), [e2020JA028091].

Dinsmore*, R., Mathews, J. D., Coster, A., Robinson, R. M., Sarkhel, S., Erickson, P. J., & Urbina, J. (2021). Multi-instrument observations of SCIPS: 1. ISR and GPS TEC results. *Journal of Atmospheric and Solar-Terrestrial Physics*, 213, [105515].

Seal*, R., & Urbina, J. (2020). GnuRadar: An Open-Source Software-Defined Radio Receiver Platform for Radar Applications. *IEEE Aerospace and Electronic Systems Magazine*, 35(2), 30-36. [9063713].

PROFESSIONAL ACTIVITIES

- **Member**, National Science Foundation CEDAR Science Steering Committee (*Appointed*, June 2019 - Present).
- **Co-Chair**, National Science Foundation CEDAR Diversity, Equity, and Inclusion Task Force (June 2020 – Present)
- **Member**, The Society of Photo-Optical Instrumentation Engineers (SPIE). (April 9, 2022 - Present).
- **Program Committee**, Radar Sensor Technology XXVI, 4 – 6 April, 2022, SPIE Defense and Commercial Sensing, Orlando, FL.
- **Session Organizer and Co-Chair**, “*Student Research in Algorithms and Processing II*”, Radar Sensor Technology XXVI, 4 – 6 April 2022, SPIE Defense and Commercial Sensing, Orlando, FL.
- **Co-Chair**, Solar and Space Physics National Academy of Sciences Decadal Survey White Papers Workshops, Workshop #3: “*The Future of Ground-Based Research for Magnetospheric and ITM Physics*” (January 2022 – Present)
- **Lead Organizer**, Solar and Space Physics National Academy of Sciences Decadal Survey White Papers on ITM Coupling: A systems approach (In Progress).
- **Chair**, IEEE Central PA Section (*Elected*, October 2017 – present).
- **Member**, American Association for the Advancement of Science (AAAS). (December 2019 - Present).
- **Member**, American Geophysical Union (AGU) (December 1996 - Present).
- **Member**, Association for Computing Machinery (ACM) (September 2008 - Present).
- **Member**, International Union of Radio Science (URSI) (January 2008 - Present).
- **Member**, American Society for Engineering Education (ASEE) (August 2006 - Present).
- **Member**, Institute of Electrical and Electronics Engineers (IEEE) (August 2001 - Present).
- **Member**, IEEE Antenna and Propagation Society (August 2007 – Present).
- **Member**, IEEE Aerospace and Electronic Systems Society Membership (October 2005 – Present).
- **Member**, IEEE Education Society Membership (October 2013– Present).
- **Member**, IEEE Geoscience and Remote Sensing Society Membership (October 2005 – Present).
- **Member**, IEEE Microwave Theory and Techniques Society Membership (August 2007 – Present).