

Edward Guinan, PhD

Professor of Astrophysics and Planetary Sciences | College of Liberal Arts and Sciences at Villanova University

Villanova, PA, US

Edward Guinan, PhD, an expert in astronomy and space science research explores the sun, stars, planets, extraterrestrial life potential.

Biography

Dr. Guinan is a pioneer in astronomy and space science research that studies our Sun, stars, and planets inside and outside our solar system as well as the search for potential life on these planets. His recent research efforts are primarily aimed at studying the effects that X-ray and UV from host stars have on their planets and to determine if these exoplanets could be habitable. Dr. Guinan also carries out research in astrobiology on Earth to study extremophiles (life in extreme conditions) as proxies for potential life on Venus, Mars, and Titan. A principal and guest investigator on numerous NASA astronomy and NASA and NSF sponsored research programs, Dr. Guinan is adept at presenting complex astronomical concepts in a lively, clear fashion.

Dr. Guinan is active in establishing and promoting astronomy education worldwide. He is a founding member of the African Astronomical Society (AfAS) and the East Africa Astronomical Society (EAAS). Dr. Guinan also served as the Chair of the International Astronomy Union's (IAU) Teaching Astronomy for Development (TAD) program and was Co-chair of the International School of Young Astronomers (ISYA) for over 10 years. In these programs he helped organize schools and workshops in dozens of developing countries. Currently he is the Co-chair of the IAU Office for Astronomy Development (OAD) Task Force that stimulates and supports astronomy research and education at universities in many developing countries. In addition, since 2012 he helps organize and participated in several CARIB-STEM programs held at the University College of the Cayman Islands (UCCI).

In addition to this international outreach work, Dr. Guinan has served on the Council of the American Astronomical Society (AAS). He currently is serving on the AAS Publication Board. While a member of the AAS council he and two colleagues initiated a travel grant program to support the attendance of minorities at meetings of the American Astronomical Society: Funds for Astronomical Meetings: Funds for Astronomical Meetings: Outreach to Underrepresented Scientists (FAMOUS).

Industry Expertise

Research, Education/Learning, Writing and Editing

Areas of Expertise

Stellar Astrophysics Including Solar Activity and Flares, Astrobiology/Exobiology, Exoplanets and the Suitability of Exoplanets for Life, Pulsating Stars and Stellar Evolution, Interstellar Travel Potential, Severe & Hazardous Weather / Global Warming

Affiliations

IAU Office for Astronomy Development (OAD): Task Force for Education and Research in Universities, International Astronomical Union, American Astronomical Society, American Association of Variable Star Observers (AAVSO)

Education

University of Pennsylvania
PhD

Villanova University
BS

Select Accomplishments

Alcott Medal for Distinguished Service from the American Association of Variable Star Observers
2015

Outstanding Mentoring & Teaching Award Villanova University
2012

One of first to observe rings around Neptune
1982

Guinan and Villanova colleague Frank Maloney found evidence of rings around the planet Neptune. Their discovery was confirmed in 1989 by NASA's Voyager Mission.

Helped establish the Biruni Observatory in Shiraz, Iran.
1975-1977

Kepler Mission Guest Investigator
2010-2015

Kepler Mission searched for and discovered Earth-size exoplanets.

International Astronomical Union's Global Astronomy, Education and Outreach

Active in establishing and promoting international astronomy education, research and outreach programs in developing countries. These include the International School for Young Astronomers (ISYA) and Teaching Astronomy for Development (TAD). Since 2012 he has been the Chair of the Astronomy for Universities and Research Program at the IAU Office of Astronomy for Development (IAU/OAD). In addition, he participates in CARIB-STEM programs held at the University College of the Cayman Islands (UCCI).

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