

## Dr. Susan M. Niebur

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Dr. Susan M. Niebur analyzes current, past, and future space science missions and extracts lessons learned. With training in physics, space science, and program management, she has led meetings, served on red teams, and participated in over a dozen official NASA review panels (including TMC) since leaving NASA in 2006. Current work includes analyzing the history of the Discovery missions and using new media to encourage and inform young planetary scientists.

### EDUCATION

Ph.D. in Physics, Washington University in St. Louis	August 2001
Thesis: Observation of Energy-Dependent Electron-Capture Decay in Galactic Cosmic Rays	
A.M. in Physics, Washington University in St. Louis	May 1997
B.S. in Physics <i>with high honor</i> , Georgia Institute of Technology	March 1995

### PROFESSIONAL EXPERIENCE

CEO/Consultant, Niebur Consulting	2006-present
Discovery Program Scientist, NASA Headquarters	2002-2006
Presidential Management Intern, NASA Headquarters	2001-2002
CEO/President, National Association of Graduate-Professional Students	1998-1999
Graduate Research Assistant, Washington University in St. Louis	1995-2001
Undergraduate Research Assistant, Georgia Institute of Technology	1993-1995

### CURRENT RESEARCH GRANTS

Meeting the Challenge: A History of NASA's Discovery Program, in the History of Scientific Exploration of Earth and Space Program, 2008-2011. Program Officer: T. Jens Feeley.  
Women on a Mission: Outreach Supplement, 2009-2011. NASA Program Officer: Larry Cooper.

### AWARDS AND HONORS

NASA Headquarters Science Mission Directorate Peer Award (2005), NASA Certificate of Recognition (2004), OSS nomination for Headquarters Honor Award (2004), NASA For A Special Task (FAST) Award (2003), Presidential Management Internship (2001-2003)  
National Association of Graduate-Professional Students Lifetime Achievement Award, (2001), Leadership Awards (1998 and 1999)  
Washington University Bridging GAPS 10<sup>th</sup> Anniversary Alumni Award (2004), Gehm Graduate Scholarship (1999-2000), Olin Fellowship (1995-1999), Graduate Student Senate Leadership Award (1997)  
American Physical Society's Best Student Paper in Astrophysics, April meeting (2000)

## **SERVICE**

NASA review panels: mission proposal and/or senior reviews for planetary science (Discovery), Heliophysics (SMEX), Astrophysics (extended missions); Heliophysics Data Management Program Senior Review; NASA Astrobiology Institute; Discovery Data Analysis Program; Office of Education reviews; Science Education & Public Outreach (E/PO) Forums; Summer of Innovation; and more: 2006, 2007, 2008, 2009, 2010, 2011; Women in Planetary Science.com publisher (2008-present); Women's Networking Breakfast at the Lunar and Planetary Science Conference organizer (2008, 2009, 2010, 2011); Women in Astrophysics and Space Science Conference Organizing Committee (2008-2009); Recognition in social media: Bloganthropy award, for using social media to make a difference (2011), George Washington University STEM case study award winner (2011), Bloggies Best Science Weblog (finalist, 2011), BlogHer Voices of the Year (2010), featured in Health, Parents, Edwards (CA), and Notebook (AU) magazines, CNN.com, Fox 5 News; NASA Speakers' Bureau outreach, including schoolwide assemblies at elementary, middle, and high schools in three states (2002-2005), Lockheed-Martin Take Your Child to Work Day (2002), National Capital Science Festival (2002); American Physical Society Forum on Graduate Student Affairs Co-Founder (2001), Chair (2001), and Past Chair (2002); APS Task Force on Graduate Student Participation (2000-2001); APS Committee on Membership (2001); AAAS Next Wave Campus Representative (2000-2001); National Association of Graduate-Professional Students President (1998-1999), Vice-President and Membership Coordinator (1998), South-central Regional Coordinator and Board Member (1997-1998), Bills and Resolutions Chairperson (1996-1997). Co-Administrator of The National Doctoral Program Survey (1999-2001); and Washington University Board of Trustees member (1998-1999); Graduate-Professional Council President (1998-1999); Graduate Student Senate President (1997-1998), Vice President (1996-1997); Peer Mentors Co-Founder (1999-2001).

## **SELECTED PUBLICATIONS**

Niebur, S. M. (2011) Assessing the Principal Investigator Experience Requirement, 9<sup>th</sup> IAA Low-Cost Planetary Missions Conference Proceedings; submitted to Acta Astronautica.

Niebur, S. M. (2010) Principal Investigators and Project Managers: Insights from Discovery. Space Policy 29, August 2010, pp. 1-11.

Niebur, S. M. (2010) An Interview with Tom Duxbury: An American's Perspective of Phobos 2 and Mars 96. Quest: The History of Spaceflight Quarterly, vol 17:4 November 2010.

Niebur, S. M. (2009) Principal Investigators and Mission Leadership. Space Policy 25, August 2009, pp. 181-186.

Niebur, S. M. (2009) Women and Mission Leadership. Space Policy 26, November 2009, pp. 257-263.

Niebur, S. M. (2003) Opportunities in Solar System Exploration. Proceedings of the 2003 International Thermal Detectors Workshop.

Niebur, S. M., T. H. Morgan, and C. S. Niebur. (2003) Future Mission Proposal Opportunities: Discovery, New Frontiers, and Project Prometheus. Proceedings of the Stardust Workshop on Cometary Dust in Astrophysics.

- Morgan, T. H. and S. M. Niebur. (2003) Implementing a New Line of Medium-Class, Unmanned Space Exploration Missions. AIP Conference Proceedings of the Space Technology Applications International Forum.
- Niebur, S. M., et al. (2003) Cosmic-Ray Energy Loss in the Heliosphere: Direct Evidence from Electron-Capture-Decay Secondary Isotopes. *Journal of Geophysical Research* 108(A10), pp. 8033-9.
- Niebur, S. M. (2001) Observation of Energy-Dependent Electron-Capture Decay in Galactic Cosmic Rays. Ph.D. Thesis, Washington University in St. Louis.
- Niebur, S. M. (2001) "Reacceleration of Galactic Cosmic Rays: Secondary Electron Capture Isotopes Measured by the Cosmic Ray Isotope Spectrometer" in *Astrophysical Sources of High Energy Particles and Radiation*, ed. M. M. Shapiro, T. Stanev, J. Wefel. Dordrecht, Kluwer. pp. 305-309.
- Niebur, S. M., W. R. Binns, E. R. Christian, A. C. Cummings, J. S. George, M. H. Israel, R. A. Leske, R. A. Mewaldt, E. C. Stone, T. T. von Rosenvinge, M. E. Wiedenbeck, and N. E. Yanasak. (2001) CRIS Measurements of Electron-Capture-Decay Isotopes:  $^{37}\text{Ar}$ ,  $^{44}\text{Ti}$ ,  $^{49}\text{V}$ ,  $^{51}\text{Cr}$ ,  $^{55}\text{Fe}$ , and  $^{57}\text{Co}$ . *Proceedings of the 27th International Cosmic Ray Conference (Hamburg)* 5:1675-1678.
- Mewaldt, R. A., N. E. Yanasak, M. E. Wiedenbeck, W. R. Binns, E. R. Christian, A. C. Cummings, P. L. Hink, R. A. Leske, S. M. Niebur, T. T. von Rosenvinge, and E. C. Stone. (2001) Radioactive Clocks and Cosmic Ray Transport in the Galaxy. *Space Science Reviews* 99(1):27-39.
- Niebur, S. M., W. R. Binns, E. R. Christian, A. C. Cummings, J. S. George, P. L. Hink, J. Klarmann, R. A. Leske, M. Lijowski, R. A. Mewaldt, E. C. Stone, T. T. von Rosenvinge, M. E. Wiedenbeck, and N. E. Yanasak. (2000) "Secondary Electron-Capture Decay Isotopes and Possible Reacceleration of Galactic Cosmic Rays" in *Acceleration and Transport of Energetic Particles Observed in the Heliosphere*, ed. R. A. Mewaldt, et al. New York, AIP Conference Proceedings #528, pp. 406-409.
- Binns, W. R., M. E. Wiedenbeck, E. R. Christian, A. C. Cummings, J. S. George, P. L. Hink, J. Klarmann, R. A. Leske, M. Lijowski, S. M. Niebur, R. A. Mewaldt, E. C. Stone, T. T. von Rosenvinge, and N. E. Yanasak. (2000) "Implications of the Galactic Cosmic Ray Neon Isotopic Abundances Measured by the Cosmic Ray Isotope Spectrometer (CRIS) on ACE" in *Acceleration and Transport of Energetic Particles Observed in the Heliosphere*, ed. R. A. Mewaldt, J. R. Jokipii, M. A. Lee, E. Moebius, and T. H. Zurbuchen. New York, AIP Conference Proceedings #528, pp. 413-416.
- Mahan, S. E., W. R. Binns, E. R. Christian, A. C. Cummings, J. S. George, P. L. Hink, J. Klarmann, R. A. Leske, M. Lijowski, R. A. Mewaldt, E. C. Stone, T. T. von Rosenvinge, M. E. Wiedenbeck, and N. E. Yanasak. (1999) Secondary Electron-Capture Clock Isotopes as a Probe of Reacceleration. *Proceedings of the 26th International Cosmic Ray Conference (Salt Lake City)*, 3:17-20.
- Podosek, F. A. ., U. Ott, J. C. Brannon, C. R. Neal, T. J. Bernatowicz, P. Swan and S. E. Mahan. (1997) Thoroughly Anomalous Chromium in Orgueil. *Meteoritics & Planetary Science* 32:617-627.
- In, V., S. E. Mahan, W. L. Ditto, and M. L. Spano. (1995) Experimental Maintenance of Chaos. *Physical Review Letters* 74:4420-4423.