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## BIOGRAPHICAL SKETCH

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NAME Brad B. Gersey	POSITION TITLE Research Scientist Group Leader
<b>Prairie View A&amp;M University</b>	

EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Northern Illinois University, Dekalb, IL	BS	1986	General Studies
Colorado State University, Ft. Collins, CO	PhD	2006	Radiation Physics

2001-present    Research Scientist        NASA Center for Applied Radiation Research,  
Prairie View A & M University

1997-2001      Graduate Student.  
Radiation Health        NASA Specialized Center of Research and Training  
Trainee                    (NSCORT), Dept. of Radiological Health Sciences,  
Colorado State University.

### Synergistic Activities

As Dr. Gersey's publications demonstrate, Dr. Brad Gersey is considered an expert in micro-dosimetry and interacts with all major academic and governmental groups in the field. He has taken micro-dosimetry measurements in radiation facilities all over the world, including the NASA Space Radiation Laboratory at Brookhaven National Labs, the Los Alamos Neutron Science Center and HiMAC facility in Chiba, Japan. He has included underrepresented STEM students in his research, including work at all these facilities. He also advised students on micro-dosimetry experiments on the NASA "Vomit Comet" micro-gravity vehicle. The results obtained by the students were presented at an international conference on space dosimetry on the International Space Station.

### Professional Panel Participation

NASA Planetary Instrument Definition and Development Panel (NASA-PIDDP) 2007 Review Member, San Diego, CA, February 10, 2008.  
Institute for Space Systems Operations (ISSO) Mini-Grant Panel Review Member, University of Houston-Clear Lake, March 28, 2008.

### Professional Organizations & Awards

Health Physics Society  
Colorado State University Student Branch of Health Physics Society, President 1999-2000 and 2000-2001  
Received the Outstanding PhD Candidate in Radiological Health Sciences and Cancer Research 2000

### Relevant Publications

W. Kuhne, B. Gersey, R. Wilkins, H. Wu, S. Wender, W. Dynan, Medaka as a whole-organism model for understanding the risks of secondary neutron exposure to air and space travelers: Measurement of a relative biological effectiveness value. The Fourth Aquatic Animal Models of Human Disease Conference. January 31-February 3, 2008. Durham, North Carolina.

W. Kuhne, B. Gersey, R. Wilkins, H. Wu, S. Wender, W. Dynan, Biological effects of low dose irradiation of a vertebrate embryo, Japanese medaka (*Oryzias latipes*), with a high-energy secondary neutron spectrum. US Department of Energy Low Dose Radiation Research Investigators' Workshop VII. January 21-23, 2008. Washington, D.C.

B. Gersey, S. Aghara, R. Wilkins, J. Wedeking and R. Dwivedi, Comparison of a tissue equivalent proportional counter microdosimeter to high-energy proton and neutron fields. *Trans on Nucl Science* 54, 2276-2281, (2007).

B. Gersey, J. Sodolak, M. Hada, P. Saganti, R. Wilkins, F. Cucinotta, H. Wu, Micronuclei induction in human fibroblasts exposed in vitro to Los Alamos high-energy neutrons, *Adv in Space Res.* 40, 1754-1757, (2007).

M. Hada, B. Gersey, P. Saganti, R. Wilkins, F. Cucinotta, H. Wu, M-Band Analysis of Chromosome Aberrations in Human Epithelial Cells Induced by Low and High-LET Radiations, NASA Human Research Program Investigators' Workshop, February 12-14, 2007, League City, TX

P. Taddei, T. Borak, S. Guetersloh, B. Gersey, C. Zeitlin, L. Heilbronn, J. Miller, T. Murakami, Y. Iwata, The Response of a Spherical Tissue-Equivalent Proportional Counter to Different Heavy Ions Having Similar Velocities. *Radiation Measurements*, Volume 41, Issues 9-10, October-November 2006, Pages 1227-1234.

N. Desai, J. Sodolak, B. Gersey, M. Durante, Z.W. Lin, A. Rusek, F.A. Cucinotta, H. Wu, In Vitro H2AX Phosphorylation and Micronuclei Induction in Human Fibroblasts Across the Bragg Curve of a 577 MeV/nucleon Fe Incident Beam, *Radiation Measurements*, 41 (2006) 1209-1215.

B.B.Gersey, E.R.Benton, Y.Uchihori, N. Yasuda, M.R.Shavers, J.Wedeking, J.Sodolak, TEPC Results from ICCHIBAN-5, Proton ICCHIBAN-1, and the KC135 Flight Environment Characterization Experiments, The 9<sup>th</sup> Workshop on Radiation Monitoring for the International Space Station (WRMISS), Vienna, Austria, September 8-10, 2004

J. Zhou, V. Calvin, J. Moore, C. Polk, Y. Zhong, R. Wilkins, B. Gersey, K. Kirby, Structural composites for applications in space radiation environment, 11<sup>th</sup> International Conference on Composites/Nano Engineering (ICCE-11), Hilton-Head, SC, August 8 – 14, 2004.

B.B. Gersey, E.R. Benton, Y. Uchihori, N. Yasuda, and M.R. Shavers, Characterization of a Shuttle Style TEPC and Preliminary Results for the Benchmark Evaluations and Analysis for Shielding (BEAMS) Project. 3<sup>rd</sup> International Workshop on Space Radiation Research and 15<sup>th</sup> Annual NASA Space Radiation Health Investigators' Workshop. May 16-20, 2004.

R. Wilkins, E. Bacon, J. Sims, P.B. Saganti, B. B. Gersey, Development of Cryogenic Liquid Target for Radiation Shielding Studies. 3<sup>rd</sup> International Workshop on Space Radiation Research and 15<sup>th</sup> Annual NASA Space Radiation Health Investigators' Workshop. May 16-20, 2004.

E.R. Benton, B.B. Gersey, Y. Uchihori, N. Yasuda, J. Kesapradist, and M.R. Shavers, BEAMS: Benchmark Evaluations and Analysis of Materials for Shielding. MMARSS: Multifunctional Materials Analysis of Radiation Shielding for Spacecraft. 3<sup>rd</sup> International Workshop on Space Radiation Research and 15<sup>th</sup> Annual NASA Space Radiation Health Investigators' Workshop. May 16-20, 2004.

P. B. Saganti, F. A. Cucinotta, B. B. Gersey, R. T. Wilkins, C. J. Zeitlin, and T. F. Cleghorn, Model Calculated GCR Environment: Assessment of Neutron Flux at Mars, ICRS-10/RPS-2004, 21<sup>st</sup> Century Challenges in Radiation Protection and Shielding Madeira, Portugal, May 2004.

Y. Uchihori, K. Fujitaka, N. Yasuda, H. Kitamura, M. Takada, K. Yajima, E. R. Benton, T. Doke, K. Terasawa, T. Fuse, T. Takashima, C. Zeitlin, J. Miller, L. Heilbronn, S. Guetersloh, T. Berger, Y. Akatov, V. Bengin, M. Hajek, R. Gaza, B. Gersey, R. Wilkins, D. Woods, H. Tawara, A. Nagamatsu, S. Burmeister, InterComparison for Cosmic-ray with Heavy Ion Beams At NIRS, 2003 Annual Report of the Research Project With Heavy Ions at NIRS-HIMAC, pp.221-222, April 15, 2004

E. R. Benton, B. B. Gersey, Y. Uchihori, N. Yasuda, H. Kitamura, and M. R. Shavers, Benchmark Analysis and Evaluation of Materials for Shielding, 2003 Annual Report of the Research Project With Heavy Ions at NIRS-HIMAC, pp. 268-269, April 15, 2004

E.R. Benton, G. Bendrick, Y. Uchihori, B.B. Gersey, K. Kloesel, E.V. Bnton, and J.W. Wilson. Aircrew Exposure to Ionizing Radiation at 10-20 km Altitude. 74<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association, Spring, 2004.

B. Gersey, R. Wilkins, H. Huff, R. Dwivedi, B. Takala, J. O'Donnell, S. Wender, R. Singleterry, Correlation of neutron dosimetry using a silicon equivalent proportional counter microdosimeter and SRAM SEU cross sections for eight neutron energy spectra, IEEE Transactions on Nuclear Science, Vol. 50, Issue 6, December 2003.

M. Shavers, B. Gersey, R. Wilkins, E. Semones, F. Cucinotta, Radiation dosimetry for crewmember exposure to cosmic radiation during astronaut training operations, 12<sup>th</sup> International Congress of Radiation Research, Australia, August 17, 2003.

B. Gersey, R. Wilkins, H. Huff, R. Dwivedi, D. Woods, R. Singleterry, neutron dosimetry using tissue equivalent and silicon equivalent proportional counters for eight high-energy neutron spectra, 14<sup>th</sup> Space Radiation Health Investigators workshop, League City, TX., April 27-30, 2003

B. Gersey, T.B. Borak, S. Guetersloh, C. Zeitlin, J. Miller, L. Heilbronn, T. Murakami, Y. Iwata, The Response of a Spherical Tissue-Equivalent Proportional Counter to <sup>56</sup>Fe Particles from 200-1000 MeV/nucleon. Radiat Res. Vol. 157, No. 3. pp. 350-360. 2002.

V. Calvin, C. Polk, R. Wilkins, B. Gersey, Y. Zhong, K. Kirby, J. Zhou, Study on Regolith Material For Structural and Space Radiation Shielding Applications, 34<sup>th</sup> International SAMPE Technical Conference, pp. 358-364, Baltimore, MD November 4-7, 2002.

T. B. Borak, S. Guetersloh, B. Gersey, C. Zeitlin, J. Miller, L. Heilbronn, M. Moyers, Measurements of Short Range Nuclear Fragments in Tissue by 250 MeV Protons, 13th Symposium on Microdosimetry, An Interdisciplinary Meeting on Radiation Quality, Molecular Mechanisms, Cellular Effects and Health Consequence of Low Level Ionizing Radiation, Stresa, Italy, June 2001.

S. Guetersloh, T.B. Borak, B. Gersey, C. Zeitlin, J. Miller, L. Heilbronn, M. Moyers, Are 250 MEV Protons Low or High LET particles ?, 12th Annual Space Radiation Health Investigators' Workshop, Joint DOE/NASA Workshop, Arlington, VA June 2001.

B.B. Gersey, T.B. Borak, S.B. Guetersloh, C. Zeitlin, J. Miller, L. Heilbronn, T. Murakami, Y. Iwata, The Response of a Spherical Tissue-equivalent Proportional Counter to <sup>56</sup>Fe particles from 200-1000 MeV/nucleon, Joint DOE/NASA Radiation Investigators' Workshop, Arlington, VA, June 2001.

T. B. Borak, B. Gersey, S. Guetersloh, T. Murakami, Y. Iwata, C. Zeitlin, J. Miller, L. Heilbronn, Microdosimetry of light Ions (11P065), 2000 Annual report of the Research Project with heavy Ions ant NIRS-HIMAC, National Institute of radiological Sciences, Chiba Japan, April 2001.

B. Gersey, T.B. Borak, C. Zeitlin, J. Miller, L. Heilbronn, Measurements of Energy Deposition in 1 micron Volumes of Tissue by <sup>56</sup>Fe at 400, 600 and 1000 MeV/nucleon, NASA Specialized Center of Research and Training (NSCORT) Review, Colorado State University, Ft. Collins, CO. 2000.

B. Gersey, T.B. Borak, C. Zeitlin, L. Heilbronn, J. Miller, Measurements of Energy Deposition in 1 um Diameter Volumes of Tissue by <sup>56</sup>Fe at 400, 600, 740, and 1000 MeV per Nucleon. 10<sup>th</sup> Annual Space Radiation Health Investigators Workshop, Brookhaven National Laboratory, Upton, NY, 1999.

B. Gersey, T.B. Borak, C. Zeitlin, J. Miller, L. Heilbronn, Comparison Of Microdosimetric Lineal Energy Spectra Created By 4 Energies Of Fe-56, Rocky Mountain Health Physics Society Technical Symposium, Ft. Collins, CO, April 1999.

T.B. Borak, S. Rademacher, B. Gersey, C. Zeitlin, L. Heilbronn, J. Miller, The Influence of Wall Effects on Measurements of Energy Deposition in 1 um Diameter Volumes of Tissue by 56Fe at 600 and 1000 MeV per Nucleon, 9<sup>th</sup> Annual Space Radiation Health Investigators Workshop, Loma Linda, CA., 1998.

T.B. Borak, S. Rademacher, B. Gersey, C. Zeitlin, L. Heilbronn, J. Miller, Wall Effects Observed in Measurements of Energy Deposition in 1 um diameter Volumes of Tissue by 56 Fe at 600 and 1000 MeV per Nucleon, 32<sup>nd</sup> COSPAR Scientific Assembly, Nagoya, Japan, 1998.