Full abstracts for the 1st International Workshop on Space Radiation Research and 11th Annual NASA Space Radiation Health Investigators' Workshop are published as *Physica Medica* Vol. XVII, Supplement 1, 2001.

List of abstracts and authors follows, arranged by topical area.

General lectures

J. Kiefer	Space radiation research in the new millennium – from where we come and where we go.
F.A. Cucinotta	Once we know all the radiobiology we need to know, how can we use it to predict space radiation risks, and achieve fame and fortune?
G. Kraft	What we can learn from heavy ion therapy for radioprotection in space.
E.J. Hall	Genomic instability, bystander effect, cytoplasmic irradiation and other phenomena that may achieve fame without fortune.

Space Radiation and Hadrontherapy: a synergistic interaction

D. Lowenstein	BNL Accelerator-Based Radiobiology Facilities.
G.A. Nelson, L.M. Green, D.S. Gridley, J.O. Archambeau, J.M. Slater	Research activities at the Loma Linda University and Proton Treatment Facility - an overview.
U. Amaldi	The Italian hadrontherapy project CNAO
H. Nikjoo, S. Uehara, I.G. Khvostunov, F.A. Cucinotta, D.T. Goodhead	Monte Carlo track structure for radiation biology and space applications.
J. Miller	Recent measurements for hadrontherapy and space radiation: nuclear physics.
E.A. Blakely	New Measurements for hadrontherapy and Space Radiation: biology.

NSCORT session

A. Chatterjee, T.H. Borak	Physical and biological studies with protons and HZE particles in a NASA supported research center in radiation health.

Computer codes and calculations

J. Wilson, F.A. Cucinotta, M.Y. Kim, W. Schimmerling	Optimized Shielding for Space Radiation Protection.
A. Ferrari, J.ranft, P.R. Sala	The FLUKA radiation transport code and its use for space problems.
M.H.Y. Kim, S.A. Thibeault, J.W. Wilson, L. Heilbronn, R.L. Kiefer, J.A. Weakley, J.L. Dueber, T. Fogarty, R. Wilkins	Radiation Protection Using Martian Surface Materials in Human Exploration of Mars.
L.W. Townsend	Overview of active methods for shielding spacecraft from energetic space radiation.
L.S. Pinsky, T.L. Wilson, A. Ferrari, P. Sala, F. Carminati, R. Brun	Development of a space radiation Monte-Carlo computer simulation based on the FLUKA and ROOT codes.
R.C. Singleterry Jr, J.W. Wilson, J.L. Shinn, R.K. Tripathi, S.A. Thibeault, A.K. Noor, F.A. Cucinotta, F.F. Badavi, C.K. Chang, G. Qualls, M.S. Clowdsley, M.H.Y. Kim, J.H. Heinbockel, J. Norbury, S.R. Blattnig, J. Miller, C. Zeitlin, L.H. Heilbron	Creation and Utilization of a World Wide Web Based Space Radiation Effects Code: SIREST.
M.S. Clowdsley, J.W. Wilson, M.Y. Kim, R.C. Singleterry, R.K. Tripathi, J.H. Heinbockel, F.F. Badavi, J.L. Shinn	Neutron Environments on the Martian Surface.
U. Schneider, A. Lomax, N. Lombriser	Comparative Treatment Planning using Secondary Cancer Mortality Calculations.

L. Cella, A. Lomax, R. Miralbell	New Techniques in Hadrontherapy: Intensity Modulated Proton Beams.
M. Biaggi, F. Ballarini, A. Ferrari, A. Ottolenghi, M. Pelliccioni	A Monte-Carlo code for a direct estimation of radiation risk.
P.B. Saganti, E.N. Zapp, J.W. Wilson, F.A. Cucinotta	Visual Assessment of the Radiation Distribution in the ISS Lab Module: Visualization in the Human Body.
D. Emfietzoglou, G. Papamichael, M. Moscovitch	Monte-Carlo simulation of charged particle transport in biomatter.

Physical measurements

A. Ferrari, A. Mitaroff, M. Silari	A reference radiation facility for dosimetry at flight altitudes and in space.
W. Hajdas, A. Zehnder, L. Adams, P. Buehler, R. Harboe-Sorensen, M. Daum, R. Nickson, E. Daly, P. Nieminen	Proton Irradiation Facility and Space Radiation Monitoring at the Paul Scherrer Institute.
A. Moroni, U. Abbondanno, C. Agodi, R. Alba, F. Ballarini, G. Bellia, M. Biaggi, M. Bruno, G. Casini, S. Cavallaro, R. Cherubini, M. Chiari, M. Colonna, M. Coniglione, M. D'Agostino, A. Del Zoppo, A. Giussani, F. Gramigna, C. Maiolino, G.V. Margagliotti, P.F. Mastinu, E. Migneco, P.M. Milazzo, A. Nannini, A. Ordine, A. Ottolenghi, P. Piattelli, D. Santonocito, P. Sapienza, G. Vannini, L. Vannucci, E. Vardaci	Nuclear detecting systems at LNL and LNS: foreseen experiments to provide basic data for heavy-ion risk assessment.
T. Berger, M. Hajek, W. Schaffnner, M. Fugger, N. Vana, M. Noll, R. Ebner, Y. Akatov, V. Shurshakov, V. Arkhangelsky	Measurement of the Depth Distribution of Average LET and Absorbed Dose Inside a Water-Filled Phantom on Board Space Station MIR.
M.R. Shavers, F.A. Cucinotta, J. Miller, C. Zeitlin, L. Heilbronn, J. W. Wilson, R.C. Singleterry Jr.	Shielded Heavy-Ion Environment Linear Detector (SHIELD) experiment: An experiment for the Radiation and Technology Demonstration (RTD) Mission.
H. Yasuda, M. Suzuki, K. Ando, K. Fujitaka	Simulation of the low-Earth-orbit dose rates using secondary radiations from the HZE particles at NIRS-HIMAC.
J.C. Sutherland, D.C. Monteleone, J.G. Trunk	Integrating Ion Imager: A Device for Determining Heavy Ion Doses During Irradiations.
P. Scampoli, M. Casale, M. Durante, G. Grossi, M. Pugliese, G. Gialanella	Cell Inactivation by Beryllium, Boron and Carbon Ions at the Low-energy Irradiation Facility of the Naples University.
J. De Boer, J. Besserer, M. Moosburger, P. Quicken, P. Bilski, T. Kwiecien, P. Olko	Dosimetry of Low-Energy Protons on the Vertical-Beam Facility at the Munich Accelerator.
M. Fromm, F. Vaginay, D. Pusset, G. Meesen, A. Chambaudet, A. Poffijn	3-D Confocal Microscopy of Etched Nuclear Tracks in CR-39
A.L. Ponomarev, F. A. Cucinotta, R.K. Sachs, D.J. Brenner	Monte-Carlo Predictions of DNA Fragment-Size Distributions for Large Sizes after HZE Particle Irradiation.

Biophysical models

A. Edwards	RBE of Radiations in Space and the Implication, for Space Travel.
S.B. Curtis, E. G. Luebeck, W. D. Hazelton, S. H. Moolgavkar	The Role of Promotion in Carcinogenesis from Protracted High-LET Exposure.
E. Gudowska-Nowak, A. Kleczkowski, G. Kraft, E. Nasonova, S. Ritter, M. Scholz	Mathematical Models of Radiation-Induced Mitotic Delay: Time Course Analysis and Statistics of Lesions.
R. Katz, F. A. Cucinotta, M. Fromm, A. Chambaudet	Ion-Kill Dosimetry.

H. Yasuda, T. Komiyama, K. Fujitaka	Probability of hippocampus cell hits by high-LET space radiation in a low-Earth-orbit mission (STS-91).
M.V. Lokajicek, T. Cechak, L. Judas, J. Kluson, V. Kundrat, K. Prokes	Inactivation of individual cells by divers ions at different LET values.
G. De Angelis, M. Caldora, M. Santaquilani, R. Scipione, A. Verdecchia	Radiation-induced biological effects on crew members: a combined analysis on atmospheric flight personnel.
S. Chauvie, R. Cirio, F. Marchetto	A Monte Carlo model for cell-cycle kinetics in charged particle irradiation.
R. Schulte, V. Bashkirov, S. Shchemelinin, G. Garty, R. Chechik, A. Breskin	Modeling of radiation action based on nanodosimetric event spectra.
R.D. Esposito, M. Durante, G. Gialanella, G. Grossi, M. Pugliese, P. Scampoli, T.D. Jones	A model of radiation-induced myelopoiesis in space.

In vivo studies

A.L. Brooks, S. Bao, K. Rithidech, W.B. Chrisler, L.A. Couch, L.A. Braby	Induction and Repair of HZE Induced Cytogenetic Damage.
A. Becciolini, S. Porciani, A. Lanini, M. Balzi, P. Faraoni	Proposal for biochemical dosimeter for prolonged space flights.
S. Porciani, A. Lanini, M. Balzi, P. Faraoni, A. Becciolini	Polyamines as biochemical indicators of radiation injury.
P.Y. Chang, N. Kanazawa, L. Lutze-Mann, R. Winegar	HZE Particle Radiation Induces Tissue-specific and P53-dependent mutagenesis in Transgenetic Animals.
F. Yatagai, T. Nohmi, M. Kusakabe, K. Masumura, A. Yoshiki, H. Yamaguchi, T. Kurobe, K. Kuniya, F. Hanaoka, Y. Yano	Mutation induction by heavy ion irradiation of gptD transgenic mice.
F.J. Burns, P. Zhao, G. Xu, N. Roy, C. Loomis	Fibroma Induction in Rat Skin Following Single or Multiple Doses of 1.0 GeV/nucleon 56Fe Ions from the Brookhaven Alternating Gradient Synchrotron (AGS).

Central nervous system

B.M. Rabin, B. Shukitt-Hale, J.A. Joseph, N. Denissova	Effects of exposure to 56Fe particles on the acquisition of a conditioned place preference in rats.

Cellular and molecular biology

E. Nasonova, S. Ritter, E. Gudowska-Novak, G. Kraft	High-LET-induced chromosomal damage: time-dependent expression.
B.M. Sutherland, P.V. Bennett, H. Schenk, O. Sidorkina, J. Laval, J. Trunk, D. Monteleone, J. Sutherland	Clustered DNA Damages Induced by High and Low LET Radiation, Including Heavy Ions.
N. Cheong, Z.-C. Zeng, Y. Wang, G. Iliakis	Evidence for factors modulating radiation-induced G2-delay: potential application as radioprotectors.
C. Baumstark-Khan, C.E. Hellweg, M. Plam, G. Horneck	Enhanced Green Fluorescent Protein (EGFP) for space radiation research using mammalian cells in the International Space Station.
T. Ohnishi, A. Takahashi, K. Ohnishi, M. Yonezawa	Tumor suppressor p53 response is blunted by low-dose-rate radiation.
S. Brons, B. Jakob, G. Taucher-Scholz, G. Kraft	Heavy ion production of single- and double-strand breaks in plasmid DNA in aqueous solution.
M. Belli, V. Dini, G. Esposito, P. Micera, O. Sapora, G. Simone, C. Signoretti, B. Stenerlö, M.A. Tabocchini	DNA fragmentation induced in K562 cells by nitrogen ions.
K. George, H. Wu, V. Willingham, F.A. Cucinotta	The Effect of Space Radiation on the Induction of Chromosome Damage.
T. Kawata, M. Durante, K. George, Y. Furusawa, E. Gotoh, N. Takai, H. Wu, F.A. Cucinotta	Kinetics of chromatid break repair in G2 human fibroblast exposed to low- and high- LET radiation.

H. Wu, K. George, V. Willingham, F.A. Cucinotta	Comparison of chromosome aberration frequencies in pre- and post-flight astronaut lymphocytes irradiated in vitro with gamma rays.
A. Francesconi, E. Del Terra, A. Meli, F.S. Ambesi-Impiombato	Standardization of the comet assay technique on FRTLC-5 Cells.
S. Gauny, C. Wiese, A. Kronenberg	Mechanisms of mutagenesis in human cells exposed to 55 MeV protons.
A. Grosovsky, H. Bethel, K. Parks, L. Ritter, C. Giver, S. Gauny, C. Wiese, A. Kronenberg	Genomic instability in human lymphoid cells exposed to 1 GeV/amu Fe ions.
G. Palumbo, L. Varriale, V. Paba, A. Sasso, E. Crescenzi, G. Gialanella, G. Grossi, M.G. Pugliese, P. Scampoli	Effect of space radiation on expression of apoptosis-related genes in endometrial cells: a preliminary study.
M.P.J. McNamara, K.A. Bjornstad, P.Y. Chang, W. Chou, S.J. Lockett, E.A. Blakely	Modulation of Lens Cell Adhesion Molecules by Particles.

Space Radiation Research in Italy

P. Spillantini, F. Taccetti, P. Papini, L. Rossi, M. Casolino	Radiation shielding of astronauts in interplanetary flights: the CREAM surveyor to Mars and the magnetic lens system for a spaceship.
L. Narici, V. Bidoli, M. Casolino, M.P. De Pascale, G. Furano, I. Modena, A. Morselli, P. Piccozza, E. Reali, R. Sparvoli, S. Licoccia, P. Romagnoli, E. Traversa, W.G. Sannita, A. Loizzo, A. Galper, A. Khodarovich, M.G. Korotkov, A. Popov, N. Vavilov, S. Avdeev, V.P. Salnitskii, O.I. Shevchenko, V.P. Petrov, K.A. Trukhanov, M. Boezio, W. Bonvicini, A. Vacchi, N. Zampa, R. Battiston, G. Mazzenga, M. Ricci, P. Spillantini, G. Castellini, P. Carlson, C. Fuglesang	The ALTEA facility on the International Space Station.
G. De Angelis, M. Caldora, M. Santaquilani, R. Scipione, A. Verdecchia	Radiation exposure of civilian airline crew members and associated biological effects due to the atmospheric ionizing radiation environment.
E. Del Terra, A. Francesconi, A. Meli, F.S. Ambesi-Impiombato	Radiation-dependent apoptosis on cultured thyroid cells.
P. Mosesso, M. Schuber, D. Seibt, C. Schmitz, M. Fiore, A. Schinoppi, F. Palitti	X-ray-induced chromosome aberrations in human lymphocytes in vitro are potentiated under simulated microgravity conditions (clinostat).
G. Angelini, P. Ragni, D. Esposito, P. Giardi, M.L. Pompili, R. Moscardelli, M.T. Giardi	A device to study the effect of space radiation on photosyntetic organisms.
M. Durante	Influence of the shielding on the space radiation biological effectiveness.
A. Ottolenghi, F. Ballarini, M. Biaggi	Mechanistic bases for modelling space radiation risk and planning radiation protection of astronauts.
M. Belli	An overview of recent charged-particle radiation biology in Italy.

Radiation Research for the International Space Station

G. Reitz	E. Dosimetry Activities of the ISS.
G. Badhwar	Radiation Measurements on the International Space Station.
K. Ando	High LET radiobiology at NIRS-current status and future plan.