BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Howell, Roger W.	Professor of Radiology Chief, Division of Radiation Research

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Massachusetts, Amherst, MA	B.S.	02/82	Physics
University of Massachusetts, Amherst, MA	Ph.D.	10/87	Physics

RESEARCH AND PROFESSIONAL EXPERIENCE:

Positions:

1987-1989	Instructor, UMDNJ, New Jersey Medical School
1989-1995	Assistant Professor, UMDNJ, New Jersey Medical School
1995-2001	Associate Professor, UMDNJ, New Jersey Medical School
2000-present	Chairman, Radiation Safety Committee, UMDNJ Newark Campus
2001-present	Professor, UMDNJ, New Jersey Medical School
2001-present	Chief, Division of Radiation Research, Department of Radiology

Honors:

1995 Outstanding Dosimetry Manuscript Award by the Journal of Nuclear Medicine. S. Murty Goddu, R.W. Howell, D.V. Rao. "A generalized approach to absorbed dose calculations for dynamic tumor and organ masses". J. Nucl. Med. 36: 1923-1927 (1995).

2004 Loevinger-Berman Award, Society of Nuclear Medicine. http://jnm.snmjournals.org/cgi/reprint/45/11/27N

2007 Conference Keynote Lecture. 6th International Symposium Physical, Molecular, Cellular, and Medical Aspects of Auger Processes. Boston, MA, July 5-7, 2007.

2009 Basic Science Faculty of the Year Award, New Jersey Medical School

Current Special Professional Service:

2004-2015 National Council on Radiation Protection and Measurements (NCRP) - Council Member.

2006-present. Society of Nuclear Medicine Medical Internal Radiation Dose Committee (MIRD).

2011-present. International Commission on Radiation Units and Measurements (ICRU). ICRU Report Committee 25 on Bioeffect Modeling and Biologically Equivalent Dose Concepts in Radiation Therapy.

Selected Peer-reviewed Publications (Past 3 Yrs + other pertinent to this application)
(selected from over 90 peer reviewed articles, 1 edited book, 1 book, 2 patents) (1-39)

1. Howell, R.W., Rajon, D., & Bolch, W.E. (2012). Monte Carlo simulation of irradiation and killing in three-dimensional cell populations with lognormal cellular uptake of radioactivity. Int J Radiat Biol, 88(1-2), 115-22. PMID: 21745001. http://www.ncbi.nlm.nih.gov/pubmed/21745001

   http://informahealthcare.com/doi/pdfplus/10.3109/09553002.2011.602379

2. Akudugu, J.M., & Howell, R.W. (2012). Flow cytometry-assisted Monte Carlo simulation predicts clonogenic survival of cell populations with lognormal distributions of radiopharmaceuticals and anticancer drugs. Int J Radiat Biol, 88(3), 286-93. PMID: 22054423. http://www.ncbi.nlm.nih.gov/pubmed/22054423

   http://informahealthcare.com/doi/pdfplus/10.3109/09553002.2012.638357

3. Akudugu, J.M., & Howell, R.W. (2012). A method to predict response of cell populations to cocktails of chemotherapeutics and radiopharmaceuticals: Validation with daunomycin, doxorubicin, and the alpha particle emitter ^{210}Po. Nucl Med Biol, 39(7), 954-61. PMID: 22503536, PMCID: 3399932. http://www.ncbi.nlm.nih.gov/pubmed/22503536

   http://ac.els-cdn.com/S0969805112000480/1-s2.0-S0969805112000480-main.pdf?_tid=3bc1b32e-37e7-11e2-9de6-00000aab0f01&acdnat=1353947885_4f294808e42bc7ef3f048f4b8e0c5460

4. Akudugu, J.M., Azzam, E.I., & Howell, R.W. (2012). Induction of lethal bystander effects in human breast cancer cell cultures by DNA-Incorporated Iodine-125 depends on phenotype. Int J Radiat Biol, 88(12), 1028–38. PMID: 22489958. http://www.ncbi.nlm.nih.gov/pubmed/22489958

   http://informahealthcare.com/doi/pdfplus/10.3109/09553002.2012.683511

5. Roche, M., Kemp, F.W., Agrawal, A., Attanasio, A., Neti, P.V., Howell, R.W., & Ferraris, R.P. (2011). Marked changes in endogenous antioxidant expression precede vitamin A-, C-, and E-protectable, radiation-induced reductions in small intestinal nutrient transport. Free Radic Biol Med, 50(1), 55-65. PMID: 20970494. http://www.ncbi.nlm.nih.gov/pubmed/20970494

   http://ac.els-cdn.com/S0891584910013109/1-s2.0-S0891584910013109-main.pdf?_tid=2832a1ec-37e7-11e2-ad8a-00000aab0f26&acdnat=1353947852_cf7d00be75859c5be21da093138bbcff

6. Rajon, D., Bolch, W.E., & Howell, R.W. (2011). Lognormal distribution of cellular uptake of radioactivity: Monte Carlo simulation of irradiation and cell killing in 3-dimensional populations in carbon scaffolds. J Nucl Med, 52(6), 926-33. PMID: 21571792. http://www.ncbi.nlm.nih.gov/pubmed/21571792

   http://jnm.snmjournals.org/content/52/6/926.full.pdf

7. Howell, R.W. (2011). Patient exposures and consequent risks from nuclear medicine procedures. Health Physics, 100(3), 313-7. PMID: 21532917, PMCID: PMC3082396. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3082396/

8. Akudugu, J.M., Neti, P.V.S.V., & Howell, R.W. (2011). Changes in lognormal shape parameter guide design of patient-specific radiochemotherapy cocktails. J Nucl Med, 52(4), 642-9. PMID: 21421713. http://www.ncbi.nlm.nih.gov/pubmed/21421713

9. Sgouros, G., Roeske, J.C., McDevitt, M.R., Palm, S., Allen, B.J., Fisher, D.R., Brill, A.B., Song, H., Howell, R.W., Akabani, G., Bolch, W.E., Meredith, R.F., Wessels, B.W., & Zanzonico, P.B. (2010). MIRD Pamphlet No. 22 (abridged): radiobiology and dosimetry of alpha-particle emitters for targeted radionuclide therapy. J Nucl Med, 51(2), 311-28. PMID: 20080889. http://jnm.snmjournals.org/cgi/content/full/51/2/311

10. Roche, M., Neti, P.V., Kemp, F.W., Agrawal, A., Attanasio, A., Douard, V., Muduli, A., Azzam, E.I., Norkus, E., Brimacombe, M., Howell, R.W., & Ferraris, R.P. (2010). Radiation-induced reductions in transporter mRNA levels parallel reductions in intestinal sugar transport. American Journal of Physiology - Regulatory, Integrative Comparative Physiology, 298(1), R173-82. PMID: 19907007, PMCID: 2806215. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19907007

http://ajpregu.physiology.org/content/298/1/R173.full.pdf

11. Pinto, M., Azzam, E.I., & Howell, R.W. (2010). Investigation of adaptive responses in bystander cells in 3D cultures containing tritium-labeled and unlabeled normal human fibroblasts. Radiat Res, 174(8), 216-27. PMID. http://www.bioone.org/doi/abs/10.1667/RR1866.1

12. Hricak, H., Brenner, D.J., Adelstein, S.J., Frush, D.P., Hall, E.J., Howell, R.W., McCollough, C.H., Mettler, F.A., Pearce, M.S., Suleiman, O.H., Thrall, J.H., & Wagner, L.K. (2010). Managing Radiation Use in Medical Imaging: A Multifaceted Challenge. Radiology. PMID: 21163918. http://www.ncbi.nlm.nih.gov/pubmed/21163918

http://radiology.rsna.org/content/258/3/889.full.pdf

13. Howell, R.W., & Sgouros, G. (2010). Kassis receives Loevinger-Berman award. J Nucl Med, 51(12), 16N. PMID: 21098788. http://www.ncbi.nlm.nih.gov/pubmed/21098788

14. Blyth, B.J., Azzam, E.I., Howell, R.W., Ormsby, R.J., Staudacher, A.H., & Sykes, P.J. (2010). An adoptive transfer method to detect low-dose radiation-induced bystander effects in vivo. Radiat Res, 173(2), 125-37. PMID: 20095844. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=20095844

http://www.bioone.org/doi/abs/10.1667/RR1899.1

15. Sgouros, G., Howell, R.W., Bolch, W.E., & Fisher, D.R. (2009). MIRD commentary: proposed name for a dosimetry unit applicable to deterministic biological effects--the barendsen (Bd). J Nucl Med, 50(3), 485-7. PMID: 19258259. http://jnm.snmjournals.org/cgi/content/full/50/3/485

16. Hanlon, J., Lee, C., Chell, E., Gertner, M., Hansen, S., Howell, R.W., & Bolch, W.E. (2009). Kilovoltage stereotactic radiosurgery for age-related macular degeneration: assessment of optic nerve dose and patient effective dose. Med Phys, 36(8), 3671-81. PMID: 19746800. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19746800

17. Neti, P.V., & Howell, R.W. (2008). Lognormal distribution of cellular uptake of radioactivity: statistical analysis of alpha-particle track autoradiography. J Nucl Med, 49(6), 1009-16. PMID: 18483086, PMCID: 2911153. http://jnm.snmjournals.org/cgi/content/full/49/6/1009

18. Lee, C., Chell, E., Gertner, M., Hansen, S., Howell, R.W., Hanlon, J., & Bolch, W.E. (2008). Dosimetry characterization of a multibeam radiotherapy treatment for age-related macular degeneration. Med Phys, 35(11), 5151-60. PMID: 19070249. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19070249

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20. Howell, R.W. (2008). Auger processes in the 21st century. International journal of radiation biology, 84(12), 959-75. PMID: 19061120. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=19061120

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21. Ganguly, S., Chaubey, B., Tripathi, S., Upadhyay, A., Neti, P.V., Howell, R.W., & Pandey, V.N. (2008). Pharmacokinetic analysis of polyamide nucleic-acid-cell penetrating peptide conjugates targeted against HIV-1 transactivation response element. Oligonucleotides, 18(3), 277-86. PMID: 18729823. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18729823

22. Pinto, M., & Howell, R.W. (2007). Concomitant quantification of targeted drug delivery and biological response in individual cells. Biotechniques, 43(1), 64, 6-71. PMID: 17695254, PMCID: 2939863. http://www.biotechniques.com/BiotechniquesJournal/2007/July/Concomitant-quantification-of-targeted-drug-delivery-and-biological-response-in-individual-cells/biotechniques-42620.html

23. Gerashchenko, B.I., Yamagata, A., Oofusa, K., Yoshizato, K., de Toledo, S.M., & Howell, R.W. (2007). Proteome analysis of proliferative response of bystander cells adjacent to cells exposed to ionizing radiation. Proteomics, 7, 2000-8. PMID, PMCID: 2921897. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2921897/?tool=nihms

24. Neti, P.V., & Howell, R.W. (2006). Log normal distribution of cellular uptake of radioactivity: implications for biologic responses to radiopharmaceuticals. J Nucl Med, 47(6), 1049-58. PMID: 16741316, PMCID: 2631404. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16741316

25. Howell, R.W., Neti, P.V., Pinto, M., Gerashchenko, B.I., Narra, V.R., & Azzam, E.I. (2006). Challenges and progress in predicting biological responses to incorporated radioactivity. Radiat Prot Dosimetry, 122(1-4), 521-7. PMID: 17287203, PMCID: 2976710. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2976710/pdf/nihms244706.pdf

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27. Neti, P.V., & Howell, R.W. (2004). Isolating effects of microscopic nonuniform distributions of ^{131}I on labeled and unlabeled cells. J Nucl Med, 45(6), 1050-8. PMID: 15181140, PMCID: 2911233. http://jnm.snmjournals.org/cgi/content/full/45/6/1050

28. Neti, P.V., & Howell, R.W. (2003). When may a nonuniform distribution of ^{131}I be considered uniform? An experimental basis for multicellular dosimetry. J Nucl Med, 44(12), 2019-26. PMID: 14660728, PMCID: 2933742. http://jnm.snmjournals.org/cgi/content/full/44/12/2019

29. Gerashchenko, B.I., & Howell, R.W. (2003). Flow cytometry as a strategy to study radiation-induced bystander effects in co-culture systems. Cytometry, 54A, 1-7. PMID: 12820115. http://onlinelibrary.wiley.com/doi/10.1002/cyto.a.10049/full

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37. Howell, R.W., Azure, M.T., Narra, V.R., & Rao, D.V. (1994). Relative biological effectiveness of alpha emitters in vivo at low doses. Radiat Res, 137, 352-60. PMID. http://www.ncbi.nlm.nih.gov/pubmed/8146279?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=64

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