

## CURRICULUM VITAE

**Robert Jean Melamede, Ph.D.**

**Current effort: applying years of scientific development to meet social needs of humanity.**

**<http://www.drboobscannabisawakeningfoundation.com>**

### **Education:**

Herbert H. Lehman College,	NYC	B.A.	1969	Anat/Phys.
Herbert H. Lehman College,	NYC	M.S.	1972	Molec/Biochem.
City University of New York,	NYC	Ph.D	1980	Molec/Biochem

### **Professional Experience**

Chairman Biology Dept.	University of Colorado CS	9/01-9-05
Associate Processor	University of Colorado CS	9/01-present
Director	LCCRO Monoclonal Facility	1/93-2001
Assistant Research Professor	Univ. of Vermont	8/88-2001
Assistant Research Professor	N.Y. Medical College	1985-8/88
Research Associate	N.Y. Medical College	1978-1981
Graduate Fellow	Lehman College	1975-1978
Adjunct Lecturer	Lehman College	1970-1975
Part-time Lecturer	Bronx Comm. College	1970
Visiting Professor	University of Virginia (CME)	2004
Visiting Professor	University of California (CME)	2006, 2008, 2010, 2012

### **Industry**

07/09-present CEO Cannabis Science

05/09 CSO Cannabis Science

10/08 appointed to board of director DynamicAlert

Scientific Advisory Board Mountain High Acquisitions Corp 2014-present

Scientific Advisory Board GreenJane Corp 2014-present

Scientific Advisory Board Newco Resources Corp 2014-present

Scientific Advisory Board Enertopia Corp 2014-present

Scientific Advisory Board Cannabis Science present

Scientific Advisory Board World Aids Institute, 2012-present

Scientific Advisory Board Tim Brown Foundation (The Berlin Patient, world's only person cured of HIV), 2012-present

Scientific Advisory Board Cannabis Science Foundation, 2012-present

Scientific Advisory Board Unconventional Foundation For Autism, 2010-present

Scientific Advisory Board Phoenix Tears Foundation, 2010-present

Advisory Board of the IACM Journal (The Journal of the International Association for Cannabis as Medicine) 2006

Scientific Advisory Board Medical Marijuana Policy Advocacy Project 2006-present.

Board of Directors-Newellink Inc 2005-2007

Scientific Advisory Board, Americans for Safe Access, 2005-present  
Scientific Advisory Board, Mile High public company, 2014  
Scientific Advisory Board, Enertopia, 2014  
Scientific Advisory Board, Compassion Chicago, 2015

Scientific Advisory Board, Global Cures Center. 2015  
Japanese Clinical Association of Cannabinoids (JCAC) Over Sea Corresponding Member  
of JCAC 2016

### **Refereed Publications**

1. Melamede, R. (2009). Parasitic Brain Infection, Endocannabinoids, and Schizophrenia Medical Hypotheses 72 (2009) 220–222 (first e-published 2008)
2. Melamede, R. J. (2006). Endocannabinoids: Multi-scaled, Global Homeostatic Regulators of Cells and Society. [Paper #70](#). Proceedings of the Sixth International Conference on Complex Systems, accepted for the print proceeding of the conference (2008).
3. Robert Melamede, (2006) “The Cannabis Paradox,” O’Shaughnessy, Journal of the California Cannabis Research Medical Group (CCMRG), Spring 2006. Reprinted from *Harm Reduct J*, 2, 21
4. Robert Melamede, (2005) “Medical Marijuana Can Help Biochemical Balance,” O’Shaughnessy, Journal of the California Cannabis Research Medical Group, (CCMRG), Spring 2005 Reprinted from *Cannabis Health* Vol 3, issue 3.
5. Melamede, R. J. (2005). Harm reduction-the cannabis paradox. *Harm Reduct J*, 2(1), 17.
6. Melamede, R. (2005). Cannabis and tobacco smoke are not equally carcinogenic. *Harm Reduct J*, 2, 21.
7. Nakae Y, Stoward PJ, Bespalov IA, Melamede RJ, Wallace SS. (2005) A new technique for the quantitative assessment of 8-oxoguanine in nuclear DNA as a marker of oxidative stress. Application to dystrophin-deficient DMD skeletal muscles. *Histochem Cell Biol*. 2005 Aug 10:1-11
8. Newell MK, Melamede R, Villalobos-Menuey E, Swartzendruber D, Trauger R, Camley RE, Crisp W. (2004), The Effects of Chemotherapeutics on Cellular Metabolism and Consequent Immune Recognition. *Journal of Immune Based Therapies Vaccines*. 2004 Feb 2;2(1):3. Epub 2004 Feb 02.
9. M.-E. Harper, A. Antoniou, E. Villalobos-Menuey, A. Russo, R. Trauger, M. Vendemelio, R. Bartholemew, D. Carlo, A. Shaikh, J. Kupperman, E. W. Newell, I. A. Bespalov, S. S. Wallace, Y. Liu, J. R. Rogers, G. L. Gibbs, J. L. Leahy, R. E. Camley, R. Melamede, and M. K. Newell. Characterization of a Novel Metabolic Strategy Used by Drug-resistant Tumor Cells. (2002) *Federation of American Societies for Experimental Biology J*. 16. 1550-1557.
10. Melamede R.J. (2002) Dissipative Structures and the Origins of Life. epub New England Complex Systems Institute, #604
11. Persinger RL, Melamede R, Bespalov I, Wallace S, Taatjes DJ, Janssen-Heininger Y. Imaging techniques used for the detection of 8-oxoguanine adducts and DNA

- repair proteins in cells and tissues. *Experimental Gerontology* 2001 Sep;36 (9):1483-94.
12. Potts, R.J., Bepalov, I.A., Wallace, S.S., Melamed, R.J., and Hart, B.A. (2001) Inhibition of Oxidative DNA Repair in Cadmium-Adapted Alveolar Epithelial Cells. *Toxicology*. 2001 Mar 21;161(1-2):25-38.
  13. Rebecca P. Soutanakis, Robert Melamed, Ivan Bepalov, Susan Wallace, Kenneth Beckman, Bruce Ames, Douglas J. Taatjes, and Yvonne M.W. Janssen-Heininger (2000) Fluorescent Detection of 8-oxoguanine in Nuclear and Mitochondrial DNA using the Mouse Monoclonal Fab 166 and Confocal Scanning Laser Microscopy in Cultured Cells. *Radical Biology and Medicine* 28 (6) 987-998.
  14. Ivan Bepalov, Jeffrey Bond, Andrei Purmal, Susan Wallace and Robert J. Melamed. (1999) Fabs Specific For 8-Oxoguanine: Control of DNA Binding. *Journal of Molecular Biology* 293, (5), 1085-1095.
  15. Stephenson, A.E., Fives-Taylor, P. and Melamed, R.J. (1998) Cell-based Panning as a Means to Isolate Phage Display Fabs Specific for a Bacterial Surface Protein. *Methods in Cell Science*. 20:241-249.
  16. Jiang, D., Hatahet, Z., Melamed, R.J., and Wallace, S.S. (1997) Characterization of *Escherichia coli* endonuclease VIII. *Journal of Biochemistry*. 272:51:32230-32239.
  17. Jiang D, Hatahet Z, Blaisdell JO, Melamed RJ, Wallace SS. *Escherichia coli* endonuclease VIII: cloning, sequencing, and overexpression of the *nei* structural gene and characterization of *nei* and *nei* nth mutants. *Journal Bacteriology*. 1997 Jun;179 (11):3773-3782.
  18. Bepalov, I.A., Purmal, A.A., Bond, J., Wallace, S.S. and Melamed, R.J. (1997). Altering the Specificity of Hapten Binding Fabs that Recognize DNA Base Modifications. In *Antibody Engineering: New Technology, Application & Commercialization*. International Business Communication. 5.12:181-198
  19. Bepalov, I.A., Purmal, A.A., Glackin, P.M., Wallace, S.S. and Melamed, R.J. (1996). Recombinant Phabs Reactive with 7,8,-Dihydro-8-oxoguanine, a Major Oxidative DNA Lesion. *Biochemistry* 35:2067-2078.
  20. Landau, S.B., Aziz, W.I., Woodcock-Mitchell and Melamed R.J. (1995). V $\gamma$ (I) Expression in Human Intestinal Lymphocytes is Restricted and Preferentially Utilizes V $\gamma$ 4. *Immunological Investigations* 24(6):947-955.
  21. Yao, M., Hatahet, Z., Melamed, R.J. and Kow, Y.W. (1994). Purification and Characterization of a Novel Inosine Specific Enzyme, Inosine 3' Endonuclease from *Escherichia coli* *Journal of Biochemistry*. 269:16260-16268.
  22. Purmal, A.A., Lampman, G.W., Pourmal, E., I., Melamed, R.J., Wallace., S.S. and Kow, Y.W. (1994). Uracil DNA N-glycosylase distributively interacts with duplex polynucleotides containing repeating units of either TGGCCAAGCU or TGGCCAAGCTTGGCCAAGCU. *Journal of Biochemistry*.. 269:22046-22053.
  23. Melamed, R.J., Zafer Hatahet, Kow, Y.W., Ide, H. and Wallace, S.S. (1994). Isolation and Characterization of Endonuclease VIII from *Escherichia Coli* *Biochemistry* 33:1255-1264.
  24. Schaeffer, W.I. and Melamed, R.J. (1992). Fluorometric Quantitation of Broth Cultured Mycoplasmas using Alkaline Ethidium Bromide. *Clinical Microbiology* 31(5):1303-1307

25. Kow, W.K., Faundez, G., Melamede, R.J. and Wallace, S.S. (1991). Processing of Model Single Stranded Breaks in OX-174 RF Transfecting DNA by Escherichia Coli Radiation Research. 1991 Jun;126(3):357-366.
26. Gulwani, B. Imberti, L., Maio, M., Melamede, R.J., and Ferrone, S. (1987). Immunosuppressive activity of T cell clones generated from human T cells stimulated with autologous T-PHA cells. J. Immunology. 139:2130-2136.
27. Ide, H., Melamede, R.J. and Wallace, S.S. (1987). Synthesis of dihydrothymidine and thymine glycol triphosphates and their ability to serve as substrates for Escherichia coli DNA polymerase I. Biochemistry 26:964-969.
28. Rajagopalan, R., Melamede, R.J., Laspia, M.F., Wallace, S.S. and Erlanger, B.F. (1984). Properties of antibodies to thymine glycol, a product of the radiolysis of DNA. Radiation Research. 97:499-510.
29. Melamede, R.J. and Wallace, S.S. (1983). Incorporation of thymine-containing DNA precursors in plasmolysed cells infected by the T4 non-lethal recombination defective mutants I. Molecular and General Genetics. 191:382-388.
30. Melamede, R.J. and Wallace, S.S. (1983). Incorporation of thymine-containing DNA precursors in plasmolysed cells infected by the T4 non-lethal recombination defective mutants II. Molecular and General Genetics. 191:389-392.
31. Melamede, R.J. and Wallace, S.S. (1980). Phenotypic differences among the alleles of the T4 recombination defective mutants. Molecular and General Genetics. 179:327-330.
32. Melamede, R.J. and Wallace, S.S. (1980). Studies on the non-lethal recombination repair deficient mutants of bacteriophage T4. III DNA replicative intermediates and T4w. Molecular and General Genetics. 177:501.
33. Melamede, R.J. and Wallace, S.S. (1978). The effect of exogenous deoxyribonucleosides on thymidine incorporation in T4-infected cells. Federation of European Biochemist. Letters 87:12-16.
34. Melamede, R.J. and Wallace, S.S. (1977). Studies on the non-lethal recombinational repair deficient x and y mutants of bacteriophage T4. II DNA synthesis. Journal of Biochemistry. 24:28-40.
35. Wallace, S.S. and Melamede, R.J. (1972). Host and phage mediated repair of radiation damage in bacteriophage T4. Journal of Virology. 18:1159-1169.

#### **Non-Refereed Publications:**

##### **Abstracts.**

1. B Hurl, D Bray, K Benlhassan-Chahour, D Miller, M Selbovitz, C Freund, R Melamede, R Moore (2012) Enhancement Of Hiv Replicative Inhibition By Therapeutic Vaccination Of Th17 Galt Cell Lines With Lamp, Interleukin-22 And Gandednbc30 To Restore Viral Host Restrictive Factors And Inhibition Of Tat By Phytocannabinoids To Control Latent Hiv Infection. 25th International Conference on Antiviral Research.
2. Robert Melamede (2012) Concentrated Cannabis Extracts For The Treatment Of Numerous Disease States: Cancers, Diabetes, High Blood Pressure, Pain, Etc . International Cannabinoid Research Society.

3. Janet Sweeney, Rick Simpson, Robert Melamede (2001) Beneficial Results From Treating Numerous Types Of Cancers With Cannabis Extracts. International Cannabinoid Research Society.
4. Christopher E. Stubbs, Mike Port., Karen Newell, and Robert J. Melamede (2006) Lipid Metabolism, Cannabinoids and Cancer Therapy, BioSymposia 2006.
5. Christopher Stubbs, Michael Port, Karen Newell, Robert J. Melamede, "Metabolic and DNA Repair Enzyme Differences in the Hematopoietic Cell Lines HL60 and MDR," *LAS Undergraduate Research Forum*, 04/30/2005.
6. Michael Port, Christopher Stubbs, Karen Newell, and Robert Melamede, "HLA Class I Expression in Drug Sensitive and Drug Resistant Tumor Cells," *LAS Undergraduate Research Forum*, 04/30/2005.
7. Susan Schweitzer, Steven Barton, Karen Newell, and Robert Melamede (2003), Colorado Policy Institute. Can Cannabinoids Protect Cells From the Harmful Effects of Excess Sugar Consumption?
8. Fields, Dana and Robert Melamede (2003), American Association for the Advancement of Science (AAAS). Entropomic Space.
9. Fields, Dana and Robert Melamede (2002), Butcher Symposium Open System Far From Equilibrium Thermodynamics Suggests the Need to Use Entropomic Space
10. Robert Melamede (2002) The Costs of Marijuana Prohibition Colorado Policy Institute.
11. Robert Melamede and Karen Newell (2002), Coleman Institute. Does the Endocannabinoid System Interact with UCP-2 to Protect or Kill Cells?
12. Robert Melamede and Karen Newell (2001), Coleman Institute. The Role of Endogenous Cannabinoids in Controlling the Life, Death and Differentiation of Nerve Cells.
13. Ivan A. Beshpalov, Andrei A. Purmal, Susan S. Wallace, and Robert J. Melamede\* Engineering antibodies that bind thymine glycol in DNA, (2001) In The Twelfth Annual International Conference on Antibody Engineering. International Business Communications
14. Beshpalov, I., Purmal, A., Bond, J., Wallace, S.S., and Melamede, R.J. (1998) Engineering of Fabs Specific for 8-Oxoguanine in DNA. In The Ninth Annual International Conference Antibody Engineering. International Business Communications
15. Stephenson, A., Melamede, R.J., Mintz, K., and Fives-Taylor, P. (1997) Phage Display Monoclonal Antibodies to Adhesin Epitopes of *S. sanguis* Fap1 Protein. *Journal of Dental Research* 76:297.
16. Beshpalov, I., Purmal, A., Bond, J., Wallace, S.S., and Melamede, R.J. (1996). Altering the Specificity of Hapten Binding Fabs that Recognize DNA Base Modifications In Antibody Engineering: New Technology, Application & Commercialization. International Business Communications.
17. Beshpalov, I., Purmal, A., Glackin, M.P., Wallace, S.S., and Melamede, R.J. (1995). Recombinant Fabs Reactive with Oxidative DNA Lesions In Antibody Engineering: New Technology, Application & Commercialization. International Business Communications.
18. Landau, S.B., Aziz, W.I., Woodcook-Mitchell and Melamede R.J. (1995). V $\gamma$ 2,3,4, and 8 are Expressed by Human GD Intestinal Lymphocyte

19. Melamede, Robert (1995). Human Leukocytic Antigen (HLA) Class I Presentation of DNA Repair Genes: Diagnostic and Therapeutic Targets Journal of Cellular Biochemistry supplement 19C .
20. Melamede, R.J., Purmal, A.A., Chen, B.-X., Connelly, G., Kow, Y.W., Erlanger, B., and Wallace, S.S. (1993). *E. coli* monoclonal antibodies to oxidative DNA damages. The New York Academy of Sciences, DNA Damage: Effects on DNA Structure and Protein Recognition, Burlington, Vermont, p11.
21. Glackin, M.P., Melamede, R.J., Kow, Y.K., and Wallace, S.S. (1992). Molecular Modeling of Base Lesion Interactions in the I-d Region of Escherichia coli LacI Gene Computational Approaches to Nucleic Acid Structure and Function.
22. Schaeffer, W.I., Simkins, S., Wilson, J. and Melamede, R.J. (1992). Fluorometric Quantitation of Broth Cultured Mycoplasmas. Proceedings of the International Organization for Mycoplasma Meeting, IOM Letters, Vol 2 pg. 218.
23. Melamede, R.J., Kow, Y.W., Ide, H. and Wallace, S.S. (1989). Novel Repair Endonucleases in *E. Coli*: Endonucleases VIII and IX. J. Cell. Biochem. supp.
24. Kow, Y.W., Ide, H., Melamede, R.J. and Wallace, S.S. (1988) Comparative study of the mechanisms of action of the apurinic endonucleases of Escherichia coli. J. Cell. Biochem. supp. 12A.
25. Ide, H., Kow, Y.W., Melamede, R.J. and Wallace S.S. (1988). Specificity of DNA N-glycosylase activities of endonucleases III, VIII and IX. J. Cell. Biochem. supp. 12A.
26. Wallace, S.S., Ide, I., Kow, Y.K., Laspia, M.F., LeClerc, E.J., Melamede, R.J. and Petruzzo, L.A. (1988). Processing of oxidative DNA base damage in Escherichia coli. J. Cell. Biochem. supp. 12A.
27. Melamede, R.J., Kow, Y.W. and Wallace, S.S. (1988). Escherichia coli Endonuclease VIII and Endonuclease IX: substrate specificity and identification of damages. J. Cell. Biochem. supp. 12A.
28. Gulwani, B. Imberti, L., Maio, M., Melamede, R.J., and Ferrone, S. (1987). T Cell Clones Generated From Human T Cells Stimulated With Autologous T-PHA Cells Display An Immunosuppressive Activity. Abs International Symposium on Biotechnology in Clinical Medicine, Rome, Italy.
29. Melamede, R.J., Kow, Y.. and Wallace, S.S. (1987). Isolation and purification of a novel activity from Escherichia coli that recognizes thymine glycol. Abs. 2nd International Conference on Anticarcinogenesis and Radiation Protection, Gaithersburg, MD., VI-5.
30. Ide, H., Melamede, R.J., Kow, Y.W. and Wallace, S.S. (1987). Incorporation of dihydrothymidine triphosphate during DNA replication: An implication for the biological consequence of thymine C5-C6 bond saturation. Abs. 2nd International Conference on Anticarcinogenesis and Radiation Protection, Gaithersburg, MD, VI-4.
31. Hubbard, K., Kow, Y.W., Ide, H., Melamede, R.J. and Wallace, S.S. (1987). Quantitation of thymine radiolysis products in DNA X-irradiated in vitro. Abs. 35th Annual Meeting of the Radiat. Res. Society, Atlanta, Georgia, p. 98.
32. Melamede, R.J. and Wallace, S.S. (1985). Sodium bisulfite produces DNA damage distinguishable by Escherichia coli repair endonucleases. Abs. International Conference on the Mechanisms of DNA Damage and Repair, Gaithersburg, MD.

33. Melamede, R.J. and Wallace, S.S. (1983). A possible secondary role for thymine-containing DNA precursors. Conference on the Genetic Consequences of Nucleotide Pool Imbalance, Research Triangle Park, North Carolina.
34. Wallace, S.S., Melamede, R.J., Laspia, M.F., Rajagopalan, R. and Erlanger, B.F. (1983). Immunochemical detection of radiation-induced base lesion in DNA. *J. Cell. Biochem. Suppl.* 7B:173.
35. R.J. Rajagopalan, R., Laspia, M.F., Melamede, R.J., Wallace, S.S. and Erlanger, B.F. (1982). Some chemical and immunochemical studies on radiation modified thymidine. Abs. International Workshop on Immune Assay of Nuclear Antigens Relevant to Carcinogenesis and Chemotherapy, Manchester, England.
36. Melamede, R.J. and Wallace, S.S. (1981). Incorporation of thymine-containing DNA precursors in T4-infected plasmolysed cells. Abs. 3rd Evergreen International T4 Meeting, Olympia, Washington
37. Wallace, S.S. and Melamede, R.J. (1980). Properties of the T4 recombination repair defective mutants. Abs. 2nd Evergreen T4 Meeting, Olympia, Washington.
38. Wallace, S.S. and Melamede, R.J. (1979). DNA synthesis in T4-infected plasmolysed cells: Effects of the non-lethal recombination gene products. *Fed. Proc.* 38:489.
39. Melamede, R.J. and Wallace, S.S. (1978). T4-induced recombination repair. *Supramolec. Struc., Suppl.* 2:64.
40. Melamede, R.J. and Wallace, S.S. (1977). Aberrant DNA intermediates in cells infected with the recombination deficient x and y mutants of bacteriophage T4. *Biophys. J.* 17:286a.
41. Melamede, R.J. and Wallace, S.S. (1974). DNA synthesis in T4 and its repair deficient mutants. *Fed. Proc.* 33:1600.

#### **Articles:**

1. Melamede, R. and Miller, D., (2012) "Cannabinoid Research Shows Promise for HIV TAT Inhibition," <http://www.hivhaven.com>
2. Melamede, Robert, (2005) "Medical Marijuana: Can help biochemical balance / nature's solution for inflammatory pain," *Cannabis Health* Vol 3, issue 3.
3. Melamede Robert. Cannabis-whether we like it or not. *Chemistry and Industry.* November 21, 2001 p.72

#### **Chapters:**

4. Melamede, R.J. Endocannabinoids, Marijuana from Within, a Requested chapter in , *The Pot Book: A Comprehensive Guide to the Risks and Benefits of Cannabis* Park Street Press; Rochester, VT 2009
5. Melamede, R. J. Indications for Cannabinoids: Autoimmune Diseases, in *CANNABIS and CANNABINOIDS, Pharmacology, Toxicology and Therapeutic Potential*, Haworth Press (U.S) April, 2002. (update for 2<sup>nd</sup> printing)
6. Melamede, R. J. Indications for Cannabinoids: Autoimmune Diseases, in *Cannabis und Cannabinoide. Pharmakologie, Toxikologie und Therapeutisches Potential.* Huber-Verlag (Bern), January, 2001 (Translation of 1<sup>st</sup> printing)
7. Lipton, Laura, and Robert Melamede. 'Organizational Learning: The Essential Journey.' In "The Process-Centered School: Sustaining a Renaissance Community," (1997) edited by Arthur L. Costa and Rosemarie M.

8. Melamede, R.J., Kow, Y.W., and Wallace, S.S. Detection of oxidative DNA base damages: Immunochemical and electrochemical approaches. (1996) *Technologies for Detection of DNA Damage and Mutations*. Gerd P. Pfeifer, Ed., Plenum Press
9. Wallace, S.S., Ide, H., Kow, Y.W., Laspia, M.L., Melamede, R.J., Petruzzo, L.A. and LeClerc, E. (1988). Processing of oxidative DNA base damages in Escherichia coli. In *Mechanisms and Consequences of DNA Damage Processing*. Alan Liss, New York.
10. Melamede, R.J., Kow, Y.W. and Wallace, S.S. (1988). The isolation and preliminary characterization of endonuclease VIII from Escherichia coli, In: "Anticarcinogenesis and Radiation Protection", (F. Nygaard, Simic and P. Cerutti, eds.), Plenum Press, NY.
11. Melamede, R.J. and Wallace, S.S. (1985). "A possible secondary role of thymine-containing DNA precursors," in *The Genetic Consequences of Nucleotide Pool Imbalance*, F. de Serres, ed., Basic Life Science Series, Plenum Press, NY, p. 67-102.

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