

CURRICULUM VITAE

R. Michael Anson, Ph.D.

CONTACT INFORMATION

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CURRENT POSITION AND AFFILIATION:

Associate Professor
School of Mathematics and Science
The Community College of Baltimore County

EDUCATION:

Ph.D. Johns Hopkins University
Biology, 1999
"Quantitation Of The Oxidatively Induced DNA Lesion 8-Oxo-dG, And Its Repair, In Mammalian Mitochondrial DNA."
B.A. University of Maryland, Baltimore County
Biochemistry, 1990
Cum Laude
Departmental Honors

AWARDS:

"**George Sacher Student Award,**" Gerontological Society of America (1997)
"**Best Pre-doctoral Poster Presentation,**" Nathan Shock Foundation (1996)
"**Excellence in Teaching,**" E.I. DuPont (1994)
"**Outstanding Student Achievement in Chemistry,**" American Chemical Society (1987)

RESEARCH SYNOPSIS:

Oxidative damage to mitochondria is commonly hypothesized to play a causal role in senescence. My graduate research concerned the measurement of oxidative DNA damage, and mechanisms of its repair, in mitochondrial DNA. I published nine peer-reviewed articles in that area. After graduation, my focus shifted to a different question in the field of biogerontology. Caloric intake modulates the rate of aging in many species. As a post-doc and in my initial position as an assistant professor, I worked to develop new models for elucidating the underlying mechanism by which this modulation occurs. I published several peer-reviewed articles in this area, including a May 2003 study commented upon by major news services (CNN, CBS, etc.) which found that for C57Bl/6 mice, intermittent fasting without change in net caloric intake mimics many of the effects seen when daily caloric intake is altered. Currently, given that my present position does not include laboratory facilities, my contributions have shifted toward the intellectual (via collaborations and the publication of reviews and hypotheses papers).

EMPLOYMENT HISTORY:

- 2004 - present Associate Professor (2009); Assistant Professor (2004-2009), School of Mathematics and Science, The Community College of Baltimore County, Dundalk Campus, Dundalk, MD, USA
- 2001 - 2004: Associate Professor (2004); Assistant Professor (2001-2004), Biochemistry Department, St. George's University School of Medicine, Grenada, West Indies
- 1999 - 2001: Post-doctoral Fellow (IRTA), Nutritional and Molecular Physiology Unit, Laboratory of Neurosciences, National Institute on Aging, NIH
- 1999: Adjunct Faculty, The Community College of Baltimore County, Catonsville Campus
- 1992 -1999: Ph.D. Candidate, Biology Department, Johns Hopkins University and pre-IRTA, Laboratory of Molecular Genetics, NIA, NIH
- 1991: Laboratory Technician/Special Volunteer, with Dr. Richard Cutler, Molecular Physiology and Genetics Section, Laboratory of Cellular and Molecular Biology, NIA, NIH
- 1990: Chemist, Molecular Physiology and Genetics Section, Laboratory of Cellular and Molecular Biology, NIA, NIH
- 1988 -1990: Physical Science Aide, Molecular Physiology and Genetics Section, Laboratory of Cellular and Molecular Biology, NIA, NIH

TEACHING EXPERIENCE

(presented in reverse chronological order)

The Community College of Baltimore County

Course Committee Member & Instructor Course development and delivery for the two semester "Anatomy & Physiology" courses and for the one semester "Molecular and Cellular Biology" course.

St. George's University

Course Director & Instructor Course development and delivery for the Graduate Program's "Biology of Aging" course and for the School of Arts and Sciences' undergraduate "Molecular Biology" course.

Lecturer Deliver lectures for several of the School of Medicine's graduate level courses: "Biochemistry," "Medical Genetics," and "Immunology."

Topics included:

- techniques in molecular biology
- biology of reactive oxygen
- molecular detection of genetic disease
- cancer and the control of the cell cycle

The Community College of Baltimore County

Instructor Prepare and deliver lectures and examinations and supervise previously planned student 'experiments' in an undergraduate, introductory biology laboratory.

The Johns Hopkins University

Teaching Assistant Prepare and deliver review sessions and quizzes, and supervise previously planned student 'experiments,' in undergraduate, introductory "Biochemistry" and "Cell Biology" laboratory classes. (1 semester each)

PROFESSIONAL SOCIETIES:

American Aging Association
The Gerontological Society of America

EDITORIAL WORK:

Editorial Board Member, Open Longevity Science (formerly The Open Aging Journal" (start date, July 2007 - 2011)

Guest Co-editor, Journal of Gerontology, Medical and Biological Sciences Special Issue on Exceptional Longevity, 2011 (in preparation)

GRANT REVIEWER FOR THE FOLLOWING SOCIETIES, FOUNDATIONS, ETC.:

AgeUK (formerly Help the Aged), <http://www.ageuk.org.uk/>

Breast Cancer Campaign, <http://breastcancercampaign.org>

JOURNAL REVIEWER (2005 – Present; Prior Reviews Omitted):

QJM: An International Journal of Medicine; Experimental Biology and Medicine; Rejuvenation Research; Obesity Research; Obesity; Journal of Gerontology, Biological Sciences; Neurobiology of Aging

TEXTBOOK REVIEWS:

May, 2006: "Hole's Human Anatomy & Physiology," by Shier, D., Butler, J., Lewis, R. (Review of 11th edition for planning of 12th edition.) McGraw-Hill Higher Education, New York, NY

April, 2006: "Fundamentals of Anatomy & Physiology," Martini, F.H. (Review of 7th edition for planning of 8th edition.) Pearson-Benjamin Cummings, San Francisco, CA

SCIENTIFIC SKILLS:

Extensive experience with analytical DNA purification, PCR, Southern blotting, western blotting, and supportive techniques (e.g., single and double stranded probe preparation, antibody characterization, etc.), mammalian cell culture, hepatocyte isolation, small rodent handling, receptor binding assays; experience with organelle isolation, enzyme kinetics, HPLC, kinase assays, DNA sequencing.

ADJUNCT SKILLS:

Computer skills include extensive experience with Microsoft Windows 95, 98, ME, and XP, OpenOffice, WebCT, StudyMate Author, ExamView, Microsoft Excel, Microsoft PowerPoint, Microsoft Word, Lotus QuickPlace, LXR (examination database and test

administration software), ImageQuant (gel analysis software), Endnote (reference management software), Adobe Acrobat Professional, and Paint Shop Pro (image editor); moderate experience with Linux (Fedora, Ubuntu), Web-based gene analysis and search sites (e.g., BLAST, UniGene, etc.), and Microsoft Access (including use of visual basic); some programming experience (BASIC, assembly language; familiar with Fortran, visual basic) and web page design (primarily using Kompozer).

SYMPOSIA:

Anson R.M., Moulton H., co-organizers. "Oh, No, Not A Cane! Stepping Carefully Toward Solutions to Frailty." Annual Meeting of the Gerontological Society of America 1998

Anson R.M., Handy A., co-organizers. "Calories, Free Radicals, and Gene Homology: Examining the Sacred Cows of Today's Biogerontological Research." Annual Meeting of the Gerontological Society of America 1999

INVITED PRESENTATIONS:

Anson, R.M. "Could hunger be the key hormetic signal?" Body Weight, Adiposity, Energetics, & Longevity Conference, St. Simons Island, Georgia, November, 2007

SELECT MEETING PRESENTATIONS

(POSTER FORMAT – Presentations given prior to 2005 are omitted.):

Anson R.M., "Caloric Restriction In Humans: Considerations For Implementation" Annual Meeting of the Gerontological Society of America 2006

Anson R.M., "Should We Restrict Our Studies of Dietary Restriction?" Annual Meeting of the Gerontological Society of America 2007

BIBLIOGRAPHY:

Invited Papers & chapters

Anson, R.M. "The Influence of Cyclic Dietary Intake on Health and Longevity." In Robitaille, F.P., ed.: *Diet Therapy Research Trends*, Nova Science Publishers, Inc., Hauppauge, NY, pp 5-34, 2007

Anson, R.M., Hansford, R.G. "Mitochondrial influence on aging rate in *Caenorhabditis elegans*." *Aging Cell*, 3(1), 29-34, 2004.

Anson, R.M., Bohr, V.A. "Mitochondria, oxidative DNA damage, and aging." *Journal of the American Aging Association (formerly AGE)*, 23, 199-218, 2000.

General Peer Reviewed Publications

Minor, R.K., López, M., Younts, C.M., Jones, B., Pearson, K.J., Anson, R.M., Diéguez, C., de Cabo, R. "The arcuate nucleus and neuropeptide Y contribute to the antitumorigenic effect of calorie restriction." *Aging Cell*. 10(3), 483-492, 2011.

Anson, R.M., Mason, P.A., Bohr, V.A. "Gene-specific and mitochondrial repair of oxidative DNA damage." In Henderson, D.S., ed.: *Methods in Molecular Biology, Vol. 314 - DNA Repair Protocols: Mammalian Systems, 2nd edition*, Humana Press, Inc., N.J., pp 155-182, 2006.

Ingram, D.K., de Cabo, R., **Anson, R.M.**, Ottinger, M.A., Lane, M.A., Roth, G.S., Mattison, J.A. "Calorie restriction in nonhuman primates: Impact on aging, disease, and frailty." In Carey, J.R., Robine, J.-M., Michel, J.-P., Christen, Y., eds.: *Research and Perspectives in Longevity XII: Longevity and Frailty*, Springer-Verlag, Berlin, Heidelberg, pp 39-56, 2005

Anson, R.M., Jones, B., de Cabo, R. "The diet restriction paradigm: a brief review of the effects of every- other- day feeding." *AGE (Journal of the American Aging Association)*, 27(1), 39-48, 2005.

Zhu, M., de Cabo, R., **Anson, R.M.**, Ingram, D.K., Lane, M.A., "Caloric restriction modulates insulin receptor signaling in liver and skeletal muscle of rat." *Nutrition*, 21, 378-388, 2005.

Lane, M.A., de Cabo, R., Mattison, J., **Anson, R.M.**, Roth, G.S., Ingram, D.K. "The Roy Walford legacy: Diet restriction from molecules to mice to monkeys to man and onto mimetics." *Experimental Gerontology*, 39(6), 897-902, 2004.

Anson, R.M. "Absolute versus relative caloric intake: clues to the mechanism of calorie/aging-rate interactions." *Annals of the New York Academy of Sciences*, 1019, 427-429, 2004.

Ingram, D.K., **Anson, R.M.**, de Cabo, R., Mamczarz, J., Zhu, M., Mattison, J., Lane, M.A., Roth, G.S. "Development of calorie restriction mimetics as a prolongevity strategy." *Annals of the New York Academy of Sciences*, 1019, 412-423, 2004.

Anson, R.M., Guo, Z., de Cabo, R., Iyūn, T., Rios, M., Hagepanos, A., Ingram, D.K., Lane, M.A., Mattison, M.P. "Intermittent fasting dissociates beneficial effects of dietary restriction on glucose metabolism and neuronal resistance to injury from calorie intake." *Proceedings of the National Academy of Sciences of the United States of America*, 100(10), 6216-6220, 2003.

de Cabo, R., Furer-Galban, S., **Anson, R.M.**, Gilman, C., Gorospe, M., Lane, M.A. "An in vitro model of caloric restriction." *Experimental Gerontology*, 38(6), 631-639, 2003.

Anson, R.M., Hudson, E., Bohr, V.A. "Mitochondrial endogenous oxidative damage has been overestimated." *FASEB Journal*, 14(2), 355-360, 2000.

Anson, R.M., Bohr, V.A. "Gene-specific and mitochondrial repair of oxidative DNA damage." In Henderson, D.S., ed.: *Methods in Molecular Biology, Vol. 113 - DNA Repair Protocols: Eukaryotic Systems*, Humana Press, Inc., N.J., pp 257-279, 1999.

Anson, R.M., Lane, M.A. "Gerontology in the New Millennium: Report on the 28th annual meeting of the American Aging Association." *Journal of Anti-Aging Medicine*, 2(3), 287-289, 1999.

Anson, R.M., Senturker, S., Dizdaroglu, M., Bohr, V.A. "Measurement of oxidatively induced base lesions in liver from Wistar rats of different ages." *Free Radical Biology and Medicine*, 27(3-4), 456-462, 1999.

Bohr, V.A., **Anson, R.M.** "Mitochondrial DNA repair pathways." *Journal of Bioenergetics and Biomembranes*, 31(4), 391-398, 1999.

Anson, R.M., Croteau, D.L., Stierum, R.H., Filburn, F., Parsell, R., Bohr, V.A. "Homogenous repair of singlet oxygen-induced DNA damage in differentially transcribed regions and strands of human mitochondrial DNA." *Nucleic Acids Research*, 26(2), 662-668, 1998.

Bohr, V., **Anson, R.M.**, Mazur, S., Dianov, G. "Oxidative DNA damage processing and changes with aging." *Toxicology Letters*, 102-103, 47-52, 1998.

Hudson, E.K., Hogue, B.A., Souza-Pinto, N.C., Croteau, D.L., **Anson, R.M.**, Bohr, V.A., Hansford, R.G. "Age-associated change in mitochondrial DNA damage." *Free Radical Research*, 29(6), 573-579, 1998.

Taffe, B.G., Larminat, F., Laval, J., Croteau, D.L., **Anson, R.M.**, Bohr, V.A. "Gene-specific nuclear and mitochondrial repair of formamidopyrimidine DNA glycosylase-sensitive sites in Chinese hamster ovary cells." *Mutation Research*, 364(3), 183-192, 1996.

Bohr, V.A., **Anson, R.M.** "DNA damage, mutation and fine structure DNA repair in aging." *Mutation Research*, 338(1-6), 25-34, 1995.

Anson, R.M., Cutler, R., Joseph, J.A., Yamagami, K., Roth, G.S. "The effects of aging on muscarinic receptor/G protein coupling in the rat hippocampus and striatum." *Brain Research*, 1992.

Joseph, J.A., Mesco, E.R., Yamagami, K., **Anson, M.**, Cutler, R. "Oxidative stress and the loss of muscarinic and dopaminergic responsiveness in senescence." In Meyer, E.M., Simpkins, J.W., Yamamoto, J., Crews, F.T., eds.: *Advances in Behavioral Biology, Vol. 40 - Treatment of Dementias: A New Generation of Progress*, Vol. 40, Plenum Press, N.Y., pp 359-377, 1992.

Blake, M.J., Appel, N.M., Joseph, J.A., Stagg, C.A., **Anson, M.**, De Souza, E.B., Roth, G.S. "Muscarinic acetylcholine receptor subtype mRNA expression and ligand binding in the aged rat brain." *Neurobiology of Aging*, 12, 193-199, 1990.

Electronic Publications

Anson, R.M. "1700+ Review Questions for Anatomy & Physiology I." 3rd edition, August 2006. Published under the Creative Commons Attribution-ShareAlike 2.5 License. Freely available at:
http://student.cbcmd.edu/~ranson/A&P_Review_Question_e-Books/A&P_e-Books.html

Anson, R.M. "3600-Plus Review Questions for Anatomy & Physiology, Volume 2" 3rd edition, December 2008. Published under the Creative Commons Attribution-ShareAlike 2.5 License. Freely available at:
http://student.cbcmd.edu/~ranson/A&P_Review_Question_e-Books/A&P_e-Books.html