May 2008

# CURRICULUM VITAE

Name: Bert Gold, Ph.D., F.A.C.M.G.

Citizenship: United States

## Education:

1976 A.B. (Biology), Washington University, St. Louis, Missouri
1981 Ph.D. (Developmental Biology), Tufts University, Medford, Massachusetts

## Chronology of Employment:

| | |
|---|---|
| 1976-1977 | Research Technician, The Jewish Hospital of St. Louis, St. Louis, MO. |
| 1977-1981 | Graduate Fellow, Tufts University, Medford, MA. |
| 1982-1983 | Research Fellow, Dept. Path., Harvard Medical School, Boston, MA. |
| 1983-1985 | Post-Doctoral Fellow, Department of Cellular and Developmental Biology The Biological Laboratories, Harvard University, Cambridge, MA. |
| 1985-1989 | Tutor in Biology, Lowell House and The Biological Laboratories, Harvard University, Cambridge, MA. |
| 1985-1989 | Instructor, Harvard University Extension, Cambridge, MA. |
| 1986-1987 | Research Scientist, BioTechnica International, Inc., Cambridge, MA. |
| 1987-1989 | Senior Scientist, American Bio-Technologies, Inc., Cambridge, MA. |
| 1990-1993 | Supervisor, Laboratory of Biochemical and Molecular Genetics University of Medicine and Dentistry of New Jersey, Camden, NJ |
| 1993-1995 | Director, Molecular Pathology Laboratory, Temple University Hospital, Philadelphia, PA |
| 1995-1996 | Visiting Scientist, University of California, San Francisco, San Francisco, CA |
| 1997-2000 | Research Manager and Clinical Scientist, Quest Diagnostics, Van Nuys, CA |
| 2000-present | Research Fellow then, Staff Scientist, National Cancer Institute at Frederick, MD |

## Board Certification:

Board Certified in Clinical Molecular Genetics, American Board of Medical Genetics, 1996
(Qualified until 2013 through Maintenance of Certification).
Certified as a Phlebotomist, American Society of Phlebotomy Technicians, 1996
Certified to Perform HIV testing by Roche Diagnostic Systems, 1998-1999
New York State Certificate of Qualification in Genetic Testing (Limited to DNA), 1997-2001

## Membership in Scientific Societies and Professional Associations:

Elected Ph.D. Fellow of the American College of Medical Genetics, 2001

## Honors & Scientific Recognition:

Dean's List, Washington University, St. Louis, 1976
Associate Member Sigma Xi at Tufts University, 1978
NIH Post-Doctoral Fellowship at Harvard University, 1983-1985
March of Dimes of Southern New Jersey Research Award, 1991
Foundation of UMDNJ Research Award, 1991
Outstanding Volunteer Service Award, VA Medical Center, San Francisco, 1997
Bronze Impact Award, Quest Diagnostics, 1999
Elected Ph. D. Fellow, American College of Medical Genetics, 2001

Technology Transfer Award, Center for Cancer Research, National Cancer Institute, 2002
Director's Intramural Innovation Award, Career Development Award, NCI, 2006
NCI-Staff Scientist/Staff Clinician Achievement Award, 2008

Committees and Board:

Israel Cancer Research Fund, Scientific Review Board, 2005-2008
Congressionally Directed Medical Research Program, Breast Cancer Review Panel
Reviewer also for: Intel Science Talent Search
Genetics and Genomics Study Section National Institute for Research Resources

Reviewer for Scientific Journals:

AIDS
American Journal of Hypertension
Biotechniques
BMC Bioinformatics
Breast Cancer Research
Genome Biology
Human Mutation
Human Genomics
Immunogenetics
Journal of Heredity
Journal of Interferon & Cytokine Research
Journal of Leukocyte Biology
Journal of Molecular Diagnostics
Mayo Clinic Proceedings
Mitochondrion
Mutation Research
Nature
Nature Genetics
Nucleic Acids Research
Proceedings of the National Academy of the Sciences, USA

Patents:

Employee Invention Reports

1. The polymerase chain reaction based assay and kits for detecting chromosome and gene deletion. Michael Chen, Michael Dean, and Bert Gold, filed August 2001 (abandoned).

2. Variants in Complement regulatory genes predict age related macular degeneration. Michael Dean and Bert Gold, September 28, 2005.

3. Association of the ECHDC1/RNF146 gene region on human chromosome 6q with breast cancer risk and protection. Bert Gold, September 27, 2007.

Patent Applications

Complement Regulatory Gene Variants as Predictive Tests for Age-Related Macular Degeneration. US Provisional Application No. 60/772,989 filed 13 Feb 2006.

Collaborations:

Intramural

Jack Collins, Advanced Biomedical Computing Center, SAIC, National Cancer Institute
Warren Johnson, National Cancer Institute
James Lautenberger, National Cancer Institute
Richard Lempicki, SAIC and NIAID
Jill Pecon Slattery, National Cancer Institute
Mike Smith, SAIC, National Cancer Institute
Robert M. Stephens, Advanced Biomedical Computing Center, SAIC, National Cancer Institute
Cheryl Winkler, SAIC, National Cancer Institute

Extramural

Rando Allikmets, Columbia College of Physicians and Surgeons
David Altshuler, Harvard Medical School
Albino Bacolla, Texas A&M University, Houston
Francis Barany, Cornell University, School of Medicine, NY, NY
Andrew Clark, Cornell University, Ithaca, NY
Wayne Grody, UCLA
Philip Kantoff, Harvard Medical School
Shuji Ogino, Harvard Medical School
Joseph Sodroski, Harvard Medical School
Lincoln Stein, Cold Spring Harbor Laboratory
Sara Sukumar, Johns Hopkins Cancer Center, Baltimore, MD
Robert Wells, Texas A&M University, Houston

Corporate

Kevin Cramer, Sapio Sciences, York, PA
Jonathan Liu Softgenetics, State College, PA
Roche Molecular Systems, Alameda, California
John Sninsky and Tom White, Celera Diagnostics, Alameda, California
Bob Yauch, Genentech, Inc.

Scientific Community Activities:

Mentoring

Leslie Stern, MS, 1980-81, now Dir. Marketing, Perkin-Elmer, Boston, MA
Brian Ross, MS, 1990-92, now Research Associate at Thomas Jefferson University, Philadelphia, PA
Winston Thompson, Ph.D., 1992-93, now Assoc. Prof. Ob/Gyn, Morehouse University Schl. Of Med., Atlanta, GA
Atul Kumar, pre-medical, 1994-95, now MD/Ph.D. Fellow at UCSF
Vanessa Clark, I assisted with her Ph.D., 2000-2002, now retooling her career in Denver
Desiree Petersen, I assisted with her Ph.D., 2004-2005, now at Stellenbosch University, South Africa
Sadeep Shrestha, I assisted with his Ph.D., 2002-2004, now Assistant Professor at University of Alabama-Birmingham, AL

Participation in Intramural Faculties & Special Interest Groups

Breast and Gynecologic Malignancies Faculty
Breast Cancer Stem Cell Stamp Grant Interest Group

Participation in Intramural Committees

Chairman, Frederick Forum on Bioinformatics and Chemoinformatics, 2003-2005, Frederick, MD
List Owner, SNP-L, a US Government listserv devoted to Single Nucleotide Polymorphism

Research, currently with 166 US and international subscribers.

BIBLIOGRAPHY

Published

1. Gold B., Hecht N.B. Differential compartmentalization of messenger ribonucleic acid in murine testis. Biochem. 20: 4871-4877, 1981.

2. Stern, L., Gold, B., and Hecht, N.B. Gene Expression During Mammalian Spermatogenesis I. Evidence for Stage-Specific Differences in mRNA Polypeptides In Vivo. Bio Reprod 28: 483-496, 1983.

3. Gold, B., Stern, L., Bradley, F.M., and Hecht, N.B. Gene Expression During Mammalian Spermatogenesis II. Evidence for Stage-Specific Differences in mRNA Populations. J Exp Zoology 225: 123-134, 1983.

4. Stern, L., Kleene, K.C., Gold, B., and Hecht, N.B. Gene Expression During Mammalian Spermatogenesis III. Changes in Populations of mRNA During Spermatogenesis. Exp Cell Res 143: 247-255, 1983.

5. Gold, B., Fujimoto, H., Kramer, J.M., Erickson, R.P., and Hecht, N.B. Haploid Accumulation and Translational Control of Phosphoglycerate Kinase-2 Messenger RNA During Mouse Spermatogenesis. Dev Biol 98: 392-399, 1983.

6. Gold, B., Carrillo, N., Tewari, K.K., and Bogorad, L. B. Nucleotide Sequence of a Preferred Maize Chloroplast Genome Template for in vitro DNA Synthesis. Proc of the Natl Acad of the Sci USA 84: 194-198, 1987.

7. Gold, B., and McCormack, M.K. FORTRAN Program Interpretation of the Triple Screen Prenatal Blood Test. Biotechnology Software 17: 23-30, 1993.

8. Lazzarini, A., Stenroos, E.S., Lehner, T., McKoy, V., Gold, B., McCormack, M.K., Reid, C.S., Ott, J., and Johnson, W.G. Short Tandem Repeat Polymorphism Studies in a New Family With X Linked Mental Retardation (MRX 20). Am J of Med Genet 57: 552-557, 1995.

9. Zhang, R.D., Guan, M., Park, Y., Tawadros, R., Yang, J.Y., Gold, B., Wu, B., and Henderson, E.E. Effect of Epstein-Barr Virus on HIV-1 Expression in T Cell Lines and CD4-Positive and CD8-Positive Lymphocytes. AIDS Res Hum Retroviruses 13: 161-171, 1997.

10. Amos, J., and Gold, B. Testing Environment for Single-Gene Disorders in U.S. Reference Laboratories. Hum Mutation 12: 293-300, 1998.

11. Kowalski, A., Radu, D., and Gold, B. Colorimetric Microwell Plate Detection of the Factor V Leiden Mutation. Clinical Chemistry 46: 1195-1198, 2000.

12. Gold, B., Radu, D., Balanko, A., and Chiang, C-S. Diagnosis of Fragile X Syndrome by Southern Blot Hybridization Using a Chemiluminescent Probe: A laboratory protocol. Mol Diagnosis 5: 169-178, 2000.

13. Arnould, I., Schriml, L., Prades, C., Lachetermacher-Tiunfol, Schneider, T., Maintoux, C., Lemoine, C., Debono, D., Devaud, C., Naudin, L., Bauche, S., Annat, M., Annilo, T., Allikmets, R., Gold, B., Denefle, P., Rosier, M., and Dean, M. Identifying and Characterizing a five-gene cluster of ATP-Binding Cassette transporters mapping to human chromosome 1q24: A new Sub-group within the ABCA sub-family. GeneScreen 1: 157-164, 2001.

14. Gold, B., Hanson, M., and Dean, M. Two Rare Confounding Polymorphisms Proximal to the Factor V Leiden Mutation. Mol Diagnosis 6: 137-140, 2001.

15. Gold, B. DNA Genotyping, Advances in Clinical Chemistry 36: 171-234, 2001.

16. Gold, B., Bergeron, J., Lachtermacher-Triunfol, M., and Dean, M. Human Duplex Sex Determination PCR. Biotechniques 31: 28-33, 2001.

17. Lappin, S., Cahlik, J., and Gold, B. Robot Printing of Reverse Dot Blot Arrays for Human Mutation Detection. J of Mol Diagnostics 3: 178-188, 2001.

18. Gold, B. Origin and Utility of the Reverse Dot Blot. Expert Review of Molecular Diagnostics 3: 89-98, 2003.

19. Egan, M.F., Callicot, J.H., Goldberg, T.E., Kolachana, B.S., Bertolino, A., Goldman, D., Gold, B., Dean, M., Lu, B., and Weinberger, D. BDNF Val66 Met polymorphism affects vesicular packaging and human hippocampal function. Cell 112: 257-269, 2003.

20. Collins, J.R., Stephens, R.M., Gold, B., Long, B., Dean, M., and Burt, S.K. An Exhaustive DNA Micro-Satellite Map of the Human Genome Using High Performance Computing. Genomics 82: 10-19, 2003.

21. Yang, X.R., Wacholder, S., Xu, Z., Dean, M., Clark, V., Gold, B., Brown, L.M., Stone, B.J., Fraumeni, J.F. Jr, and Caporaso, N.E. CYP1A1 and GSTM1 polymorphisms in relation to lung cancer risk in Chinese women. Cancer Lett 214: 197-204, 2004.

22. Ogino, S., Wilson, R.B., Gold, B., Hawley, P., and Grody, W.W. Bayesian analysis for cystic fibrosis risks in prenatal and carrier screening. Genetics in Med 6: 439-449, 2004.

23. Ogino, S., Wilson, R.B., and Gold, B. New insights on the evolution of the SMN1 and SMN2 region: simulation and meta-analysis for allele and haplotype frequency calculations. Eur J Hum Genet 12: 1-9, 2004.

24. Gold, B., Kalush, F., Bergeron, J., Scott, K., Mitra, N., Wilson, K., Ellis, N., Huang, H., Chen, M., Lippert, R., Halldorsson, B.V., Woodworth, B., White, T., Clark, A.G., Parl, F.F., Broder, S., Dean, M., and Offit, K. Estrogen Receptor Genotypes and Haplotypes Associated with Breast Cancer Risk. Cancer Res 64: 8891-8900, 2004.

25. Song, B., Gold, B., O'hUigin, C., Javanbakht, H., Li, X., Stremlau, M., Winkler, C., Dean, M., and Sodroski, J. The B30.2 (SPRY) Domain of the Retroviral Restriction Factor TRIM5α Exhibits Lineage-Specific Length and Sequence Variation in Primates. J of Virol 79: 6111-6121, 2005.

26. Ogino, S., Flodman, P., Wilson, R.B., Gold, B., and Grody, W.W. Risk Calculations for Cystic Fibrosis in Neonatal Screening by Immunoreactive Trypsinogen and CFTR Mutation Tests. Genetics in Med 7: 317-327, 2005.

27. Ng, D., Stavrou, T., Liu, L., Taylor, M.D., Gold, B., Dean, M., Kelley, M.J., Dubovsky, E.C., Vezina, G., Nicholson, H.S., Byrne, J., Rutka, J.T., Hogg, D., Reaman, G.H., and Goldstein, A.M. Retrospective family study of childhood medulloblastoma. Am J Med Genet 134: 399-403, 2005.

28. Landi, M.T, Kanetsky, P.A., Tsang, S., Gold, B., Munroe, D., Rebbeck, T., Swoyer, J., Ter-Minassian, M., Hedayati, M., Grossman, L., Goldstein, A.M., Calista, D., and Pfeiffer, R.M. MC1R, ASIP, and DNR repair in sporadic and familial melanoma in a Mediterranean population. J Natl Cancer Inst 97: 998-1007, 2005.

29. Hageman, G.S., Anderson, D.H., Johnson, L.V., Hancox, L.S., Taiber, A.J., Hardisty, L.I., Hageman, J.L., Stockman, H.A., Borchardt, J.D., Gehrs, K.M., Smith, R.J., Silvestri, G., Russell, SR., Klaver, C.C., Barbazetto, I., Chang, S., Yannuzzi, L.A., Barile, G.R., Merriam, J.C., Smith, R.T., Olsh, A.K., Bergeron, J., Zernant, J., Merriam, J.E., Gold, B., Dean, M., and Allikmets, R. A common haplotype in the complement regulatory gene factor H (HF1/CFH) predisposes individuals to age-related macular degeneration. Proc Natl Acad Sci 102: 7227-7232, 2005.

30. Petersen, D.C., Glashoff, R.H., Shrestha, S., Bergeron, J., Laten, A., Gold, B., van Rensburg, E.J., Dean, M., and Hayes, V.M. Risk for HIV-1 infection associated with a common CXCL12 (SDF1) polymorphism and CXCR4 variation in an African population. J Acquir Immune Defic Syndr 40: 521-526, 2005.

31. Gold, B., Merriam, J.E., Zernant, J., Hancox, L.S., Taiber, A.J., Gehrs, K., Cramer, K., Neel, J., Bergeron, J., Barile, G.R., Smith, R.T., Hageman, G.S., Dean, M., Allikmets, R., Chang, S., Yannuzzi, L.A., Merriam, J.C., Barbazetto, I., Lerner, L.E., Russell, S., Hoballah, J., Hageman, J., and Stockman, H. Variation in factor B (BF) and complement component 2 (C2) genes is associated with age-related macular degeneration. Nat Genet 38: 458-462, 2006.

32. Bacolla, A., Collins, J.R., Gold, B., Chuzhanova, N., Yi, M., Stephens, R.M., Stefanov, S., Olsh, A., Jakupciak, J.P., Dean, M., Lempicki, R.A., Cooper, D.N., and Wells, R.D. Long homopurine-homopyrimidine sequences are characteristic of genes expressed in brain and the pseudoautosomal region. Nucleic Acids Res 34: 2663-2667, 2006.

33. Javanbakht, H., An, P., Gold, B., Petersen, D.C., O'Huigin, C., Nelson, G.W., O'Brien, S.J., Kirk, G.D., Detels, R., Buchbinder, S., Donfield, S., Shulenin, S., Song, B., Perron, M.J., Stremlau, M., Sodroski, J., Dean, M., and Winkler, C. Effects of human TRIM5alpha polymorphisms on antiretroviral function and susceptibility to human immunodeficiency virus infection. Virology 354: 15-27, 2006.

34. Li, X., Gold, B., O'Huigin, C., Diaz-Griffero, F., Song, B., Si, Z., Li, Y., Yuan, W., Stremlau, M., Mische,C., Javanbakht, H., Scally, M., Winkler, C., Dean, M., and Sodroski, J. Unique features of TRIM5alpha among closely related human TRIM family members. Virology, 360: 419-33, 2006.

35. Hageman, G.S., Hancox, L.S., Taiber, A.J., Gehrs, K.M., Anderson, D.H., Johnson, L.V., Radeke, M.J., Kavanagh, D., Richards, A., Atkinson, J., Meri, S., Bergeron, J., Zernant, J. Merriam, J., Gold, B., Allikmets, R., and Dean, M. Extended haplotypes in the complement factor H (CFH) and CFH related (CFHR) family of genes that protect against age-related macular degeneration: Identification, ethnic distribution and evolutionary implications. Ann Med, 206, 592-604, 2007.

36. Ogino S, Wilson RB, Gold B and Flodman P. Bayesian Risk Assessment in Genetic Testing for Autosomal Dominant Disorders with Age-Dependent Penetrance J. of Genetic Counseling, 16:29-39, 2007.

37. Tan W, Wang Y, Gold B, Dean M, Harrison PJ, Weinberger DR and Law AJ. Full Length Characterization of a novel Neuregulin I variant (Type IV) in the Adult and Fetal Human Brain. J Biol Chem. 282:24343-5, 2007.

38. Pujana MA, Han JD, Starita LM, Stevens KN, Tewari M, Ahn JS, Rennert G, Moreno V, Kirchhoff T, Gold B, Assmann V, Elshamy WM, Rual JF, Levine D, Rozek LS, Gelman RS, Gunsalus KC, Greenberg RA, Sobhian B, Bertin N, Venkatesan K, Ayivi-Guedehoussou N, Solé X, Hernández P, Lázaro C, Nathanson KL, Weber BL, Cusick ME, Hill DE, Offit K, Livingston DM, Gruber SB, Parvin JD, Vidal M. Network modeling links breast cancer susceptibility and centrosome dysfunction. Nat Genet. 39:1338-1349, 2007.

39. Olshen, AB, Gold, B, Lohmueller, K, Struewing, JP, Satagopan, J, Eskin, E., Kirchhoff, Lautenberger, JA, Stefanov, SA, Friedman, E., Norton, L., Ellis, N., Viale, A., Borgen, PI, Clark, AG, Offit, K and Boyd, J. Analysis of Genetic Variation in Ashkenazi Jews by High Density SNP Genotyping. BMC Genetics, 9: 14, 2008.

40. Gold B, Kirchhoff T, Stefanov S, Lautenberger J, Viale A, Garber J, Friedman E, Narod S, Olshen A, Gregersen P, Kosarin K, Olsh A, Bergeron J, Ellis NA, Klein R, Norton L, Dean M, Boyd K and Offit K. Genome-wide association study provides evidence of a breast cancer risk locus at 6q22.33. Proc. Nat. Acad. Sci., USA, 105: 4340-5,2008.

41. Bacolod MD, Schemmann GS, Wang S, Shattock R, Giardina SF, Zeng Z, Shia J, Stengel RF, Gerry N, Hoh J,

Kirchoff T, Gold B, Christman MF, Offit K, Gerald WL, Notterman DA, Ott J, Paty PB, and Barany F (2007) The Signatures of Autozygosity Among Patients with Colorectal Cancer, Cancer Research, 68, 2610-21.

In Press

1. Meyer-Lindenberg A, Kolachana B, Gold B, Olsh A, Nicodemus KK, Mattay V, Dean M, and Weinberger DR (2008) Genetic variants in AVPR1A linked to autism predict amygdale activation and personality traits in healthy humans. Molecular Psychiatry, in the press.

1.
Invited Talks

1. Invited Speaker, Biology Department, Rutgers University, Camden, NJ, 1990.
2. Invited Speaker, Coriell Institute for Medical Research, Camden, NJ, 1991.
3. Invited Speaker, University of Medicine and Dentistry, Newark, NJ, 1993.
4. Invited Speaker, Lawrence Bogorad Symposium, Cambridge, MA, 1993.
5. Invited Speaker, National Cancer Institute, National Institutes of Health, Bethesda, MD, 1993.
6. Invited Speaker, Norris Cancer Center, Los Angeles, CA, 1996.
7. Invited Speaker, National Society of Genetic Counselors, Oakland, CA, 1999.
8. Invited Speaker, Myriad Genetic Laboratories, Salt Lake City, UT, 2000.
9. Invited Speaker, Bio-Rad Laboratories, Diagnostics Group; Hercules, CA, 2001.
10. Invited Speaker, Healthtech Institute's Conference, San Diego, CA, 2001.
11. Invited Speaker, Association for Molecular Pathology, Philadelphia, PA, 2001.
12. Invited Speaker, IBC Conference, Boston, 2002.
13. Invited Speaker, Association of Genetic Technologists, Cincinnati, OH, 2002.
14. Invited Speaker, UCLA, Genetics Training Program, Los Angeles, 2002.
15. Invited Speaker, LabCorp, Inc.; Research Triangle Park, NC, 2003.
16. Invited Speaker, Association for Molecular Pathology, 9th Annual Meeting, Orlando, FL, 2003.
17. Invited Speaker, Celera Diagnostics, Alameda, CA, 2003.
18. Invited Speaker, NCI-Frederick, Frederick, MD, 2003.
19. Invited Speaker, George Mason University, Manassas, VA, 2003.
20. Invited Speaker, Career Center, Arlington, VA, 2004.
21. Invited Speaker, 5o Congreso Internacional de Medicina, Coahuila, Mexico, 2005.
22. Invited Speaker, Memorial Sloan-Kettering Cancer Center, New York, NY, 2005.
23. Invited Speaker, Howard Community College, Columbia, MD, 2005.
24. Guest Lecturer, Hood College, Frederick, MD, 2006.
24. Invited Speaker, Cold Spring Harbor Laboratory, NY, 2007
25. Invited Speaker, Johns Hopkins Cancer Center, Baltimore, MD, 2007
26. Invited Speaker, Institute for Cancer Research and Treatment, Candiolo, Torino, Italy, 2007
27. Distinguished Lecturer, Center for Prostate Disease Research, Rockville, MD 2007
28. Invited Speaker, Mol. Medicine: Applying Current and Emerging Technologies, Orlando, FL, 2008
29. Invited Speaker, UCLA, Westwood, CA, 2008
30. Invited Speaker, Genentech, Inc., South San Francisco, CA, 2008
31. Invited Speaker, National Energy Research Supercomputer Center, Oakland, CA, 2008