

Ying S. Zou, M.D., Ph.D., FACMG

CONTACT INFORMATION

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Citizenship: U.S.A.

DEGREE-GRANTING EDUCATION

- 2004 Ph.D. (Genetics and Development),
University of Texas Southwestern Medical Center at Dallas, TX
1995 M.D., Peking Union Medical College, Beijing, China

POSTGRADUATE TRAINING

- 2007-2008 Clinical Molecular Genetics Fellow (American Board of Medical Genetics (ABMG)-
accredited). Molecular Genetics Lab, Center for Human Genetics, Boston University, Boston
2005-2007 Clinical Cytogenetics Fellow (ABMG-accredited). Clinical Cytogenetics Lab, Dept. of
Laboratory Medicine and Pathology, Mayo Clinic, Rochester, MN
1996-2000 Clinical Cytogenetics Fellow. Dept. of Human Genetics, Medical Center of Virginia,
Virginia Commonwealth University, Richmond, VA
1992-1994 Researcher, Department of Oncology. PUMC Hospital, Beijing, China

PROFESSIONAL TRAINING AND CERTIFICATION

- 2009-Present New York State Department of Health-Licensed in Cytogenetics
2009-Present American Board Medical Genetics-Certified in Clinical Molecular Genetics
2007-Present American Board of Medical Genetics-Certified in Clinical Cytogenetics
1999 Single Sperm Genotyping Analysis, Coriell Institute for Medical Research
1998 Advanced Molecular Cytogenetics Course, Cold Spring Harbor Lab

PROFESSIONAL APPOINTMENTS AND SPECIAL ACADEMIC ACTIVITIES

- 2010-Present Co-Director of Cytogenetics Laboratory, Pathology Associated Medical Labs, Spokane, WA
2010-Present Program Director of ABMG-accredited Clinical Molecular and Cytogenetics Fellowship,
Providence Sacred Heart Medical Center and Children's Hospital, Spokane, WA
2010-2011 Training Director of ABMG-accredited Clinical Cytogenetics Fellowship, Providence Sacred
Heart Medical Center and Children's Hospital, Spokane, WA
2007-2010 Director of Clinical Cytogenetics Laboratory. Center for Human Genetics, Boston University
School of Medicine (BUSM), Boston, MA
2007-2010 Assistant Professor of Pediatrics. BUSM, Boston, MA
2008-2010 Assistant Director of Clinical Molecular Genetics Laboratory, BUSM, Boston, MA
2007-2010 Training Director of ABMG-accredited Clinical Cytogenetics Fellowship, BUSM, Boston, MA
2007-2010 Member of the Graduate Faculty in Genetic Counseling Program, BUSM, Boston, MA
2004-2005 Director of Cytogenetics & Microscopic Imaging Core, Simmons Comprehensive Cancer
Center, Dallas, TX
1995-1996 Clinical Geneticist. Peking Union Medical College Hospital, Beijing, China
1995-1996 Associate Director of Cytogenetics Laboratory. National Genetics Center, Beijing, China

TEACHING EXPERIENCE:

- 2007-2010 Boston University School of Medicine, Boston, MA
1. Cancer Genetic Counseling (GMS GC 604)
 2. Clinical Applications in Human Genetics (GMS GC 605)
 3. Genetic Diagnosis and Laboratory Methods (GMS GC 600)
 4. Clinical Cytogenetics (Clinical Rotation)
- 2004-2005 Cytogenetics & Microscopic Imaging Core, Simmons Comprehensive Cancer Center, Dallas, TX
Clinical Application of Clinical Cytogenetics
- 2000-2004 Teaching Assistant, University of Texas Southwestern Medical Center at Dallas, TX
1. Biology of Cells and Tissues
 2. Advanced Topics in Cell and Molecular Biology
 3. Fundamentals of Cell Biology and Stem Cell Biology

ADMINISTRATIVE SKILLS:

Familiar with all aspects of Laboratory operations and fiscal issues (CPT codes)
Post-doctoral fellow and technologist recruitment
Availability to mentor residents, medical/graduate students, technologists
Expertise in laboratory design, renovations, and equipment purchases
Connections to cross-departmental and center initiatives
Ability to share leadership and encourage others' performances
Business skills, reducing costs, winning contracts, managing diverse workforce

HONORS, FUNDED GRANTS AND AWARDS

- 2004 American Association for Cancer Research (AACR) –WICR Brigid G. Leventhal Scholar Award in Cancer Research
- 2004 Best Research Award at AACR Conference on Telomeres and Telomerase
- 2004 Best Research Award at Annual Meeting of the Texas Genetics Society
- 2004 UT Southwestern Graduate School GSO Top Five Research Award
- 2002-2004 Department of Defense Grant (DAMD 170110419): Telomere Length and Genomic Stability as Indicators of Breast Cancer Risk
- 2003 UT Southwestern Graduate School GSO Travel Scholarship
- 2002 Ellison Medical Foundation Award at the MBL, Woods Hole, MA
- 1996 Best Research Award, National Genetics Center at Beijing, China
- 1994 Silver Award, Peking Union Medical College, China
- 1993 Gold Award, Peking Union Medical College, China

PROFESSIONAL MEMBERSHIP

- 1999-present American Association for Cancer Research
- 1996-present American Society of Human Genetics
- 1996-present American Association for the Advancement Science
- 1995-present Chinese Society of Human Genetics and Medical Genetics

PUBLICATIONS, ORIGINAL AND PEER-REVIEWED (Total 45)

- 2011 Flynn M, **Zou Y.**, Milunsky AM. Whole gene duplication of the PQBP1 gene in syndrome Resembling Renpenning. *Am. J. Med. Genet.* 155:141-144.
- 2011 Ly P, Eskiocak U, Kim S, Roig A, Hight S, **Zou Y**, Batten K, Wright W, Shay J. Characterization of aneuploid populations with trisomy 7 and 20 derived from diploid human colonic epithelial cells. *Neoplasia* (in press)
- 2010 Leon E, **Zou Y.**, Milunsky J. Mosaic Down syndrome in a patient with low-level mosaicism detected by microarray. *Am. J. Med. Genet.* 152A:3154-3156.
- 2010 Marian C, Yang L, **Zou Y.**, Pong RC, Gore C, Shay J, Kabbani W, Hsieh J, Raj GV. Evidence of epithelial to mesenchymal transition associated with cancer progression in a new prostate cancer cell line derived from a primary tumor. *Prostate.* 71:626-636
- 2010 Sheridan M, Kato T, Haldeman-Englert C, Jalali G, Milunsky J, **Zou Y.**, Klaes R, Gimelli G, Gemmill R, Drabkin H, Hacker1 A, Brown J, Tomkins D, Shaikh1 T, Kurahashi H, Zackai1 E, Emanuell B. A new palindrome-mediated recurrent translocation with 3:1 meiotic non-disjunction: The t(8;22)(q24.13;q11.21). *Am J Hum Genet.* 87:209-218.
- 2010 Eskiocak U, Kim SB, Roig AI, Kitten E, Batten K, Cornelius C, **Zou Y.**, Wright WE, Shay JW. CDDO-Me protects against heavy ion-induced transformation of human colonic epithelial cells. *Radition Res.* 174:27-36.
- 2010 **Zou Y.**, Newton S., Milunsky J. A complex maternal rearrangement results in a pure 10.8 Mb duplication of the 5q13.1-q14.1 region in an affected son. *Am. J. Med. Genet.* 152A:498-503.
- 2010 Day T, Palle K, Barkley L, Kakusho N, **Zou Y.**, Tateishi S, Verreault A, Masai H, Vaziri C. Phosphorylation Rad18 directs DNA polymerase eta to sites of stalled replication. *J Cell Biol.* 191:953-966.
- 2010 Huang XL*, **Zou Y.***, Maher T, Newton S., Milunsky J. A new *de novo* balanced translocation breakpoint truncating the autism susceptibility candidate 2 (AUTS2) gene in a patient with autism. *Am. J. Med. Genet.* 152A:2115-2119. *Co-first authors.
- 2009 Zhao Y, Sfeir AJ, **Zou Y.**, Buseman CM, Chow TT, Shay JW, Wright WE. Telomere extension occurs at most chromosome ends and is uncoupled from fill-in in human cancer cells. *Cell,* 138:463-475.
- 2009 **Zou Y.**, Misri S., Shay J., Pandita T., Wright W. Altered states of telomere deprotection and the two-stage mechanism of replicative aging. *Mol. Cell Biol.* 29:2390-2397.
- 2009 **Zou Y.**, Huang X., Newton S., Milunsky JM. Further delineation of the critical region for the 9p-duplication syndrome. *Am. J. Med. Genet.* 149A:272-276.
- 2009 Barkley L, Song I, **Zou Y.**, Vaziri C. Reduced expression of GINS complex members induces hallmarks of premalignancy in primary untransformed human cells. *Cell cycle* 8: 1577-1588.
- 2009 Lee J., Yang S., **Zou Y.**, Joseph L. The first case of erythroid/B-cell biphenotypic acute leukemia. *Leukemia.* 23:1920-1923.

- 2009 Quadrelli R., Quadrelli A., Milunsky A., **Zou Y.**, Huang X., Viera E., Mechoso B., Bellini S., Costabel M., Vaglio A. A 14-year follow-up of a case detected prenatally of partial trisomy 13q21.32-qter and monosomy 18q22.3-qter as a result of a maternal complex chromosome rearrangement involving chromosome 6;13;18. *Genet. Test Mol. Biomarkers* 13:387-393.
- 2009 **Zou Y.**, Milunsky J. Developmental disability and hypomelanosis Ito in a female with 7.3 Mb de novo duplication of Xp11.3-p11.4 and random X inactivation. *Am. J. Med. Genet.* 149A:2573-2577.
- 2008 Milunsky JM., Maher TA, Zhao G., Huang XL., Wang Z., **Zou Y.** A re-examination of the chromosome 8p22-8p23.1 region in Kabuki syndrome. *Clin Genet.* 73:502-503.
- 2008 Sarosi G, Brown G, Jaiswal K, Feagins LA, Lee E, Crook TW, Souza RF, **Zou YS**, Shay JW, Spechler SJ. Bone marrow progenitor cells contribute to esophageal regeneration and metaplasia in a rat model of Barrett's esophagus. *Dis Esophagus.* 21:43-50.
- 2008 Hanson CA, Steensma DP, Hodnefield JM, Nguyen PL, Hoyer JD, Viswanatha DS, **Zou Y**, Knudson RA, Van Dyke DL, Ketterling RP. Isolated trisomy 15: a clonal chromosome abnormality in bone marrow with doubtful hematologic significance. *Am J Clin Pathol.* 129:478-485.
- 2007 Van Dyke DL., Ebrahim SA., Al Saadi AA., Powell SA., Zenger-Hain JL., Micale MA., Wiktor AE., **Zou Y.** The impact of maternal serum screening programs for Down syndrome in southeast Michigan, 1988-2003. *Prenat Diagn.* 27(6):583-584.
- 2007 **Zou Y.**, Fink S., Stockero K., Paternoster S., Smoley S., Tun H., Reeder CB., Tefferi A., Dewald GW. Efficacy of conventional cytogenetics and FISH for EGR1 to detect deletion 5q in hematological disorders and to assess response to treatment with Lenalidomide. *Leukemia Res.* 31(9):1193-1197.
- 2007 **Zou Y.**, Van Dyke DL., Ellison JW. Microarray comparative genomic hybridization and FISH studies for unbalanced cryptic telomeric 2p deletion/16q duplication in a patient with mental retardation and behavioral problems. *Am. J. Med. Genet.* 143(7):746-751.
- 2007 Merritt JL., **Zou Y.**, Jalal SM., Michels VV. Delineation of the cryptic 1qter deletion phenotype. *Am. J. Med. Genet.* 143A:599-603.
- 2006 **Zou Y.**, Van Dyke DL., Chhabra HS., Uphoff TS., Keefe JG., Lega MA., Feely MA., Thorland EC., Jalal SM. A case of mosaic ring 20 with no detectable deletion by FISH analysis: literature review and the etiology of the seizure disorder. *Am. J. Med. Genet.* 140A:1696-1706.
- 2006 **Zou Y.**, McGrann PS., Uphoff TS., Van Dyke DL. A case of mosaic ring supernumerary marker chromosome 15 with two copies of the segment 15p11.1-q14 region. *Am. J. Med. Genet.* 140A:1663-1668.
- 2006 Liu Z., Widlak P., **Zou Y.**, Xiao F., Oh M., Li S., Chang M., Shay J., Garrard W. A recombination silencer that specifies heterchromatin positioning and ikaros association in the immunoglobulin κ locus. *Immunity* 24:405-415.
- 2004 **Zou Y.**, Sfeir A., Gryaznov S., Shay J., Wright W. Does a sentinel or a subset of short telomeres determine replicative senescence? *Mol. Biol. Cell.* 15: 3709-3718.

- 2004 **Zou Y.**, Wright W., Shay J., Cornforth M. Asynchronous replication timing of telomeres at opposite arms of mammalian chromosomes. *Proc. Nat. Acad. Sci. (USA)* 101:12928-12933.
- 2004 Ramirez RD., Sheridan S., Girard L., Sato M., Kim Y., Pollack J., **Zou Y.**, Kurie JM., Dimaio JM., Milchgrub S., Smith AL., Souza RF., Gilbey L., Zhang X., Gandia K., Vaughan MB., Gazdar AF., Shay JW., Minna JD. Immortalization of human bronchial epithelial cells in the absence of viral oncoproteins. *Cancer Res.* 64:9027-9034.
- 2004 Bechter O., **Zou Y.**, Wright W., Shay J. Telomeric recombination in mismatch repair deficient human colon cancer cells following telomerase inhibition. *Cancer Res.* 64: 3444-3451.
- 2003 Ramirez R., Herbert B., Vaughan M., **Zou Y.**, Wright W., Shay J. Bypass of telomere-dependent replicative senescence (M1) upon over-expression of CDK4 in normal human epithelial cells. *Oncogene* 22:433-444.
- 2003 Jackson-Cook C., **Zou Y.**, Turner K., Ware J. A novel tumorigenic human prostate epithelial cell Line (M2205): molecular cytogenetic characterization demonstrates c-myc amplification and jumping translocations. *Cancer Genet. Cytogenet.* 141:56-64.
- 2003 Bechter O., **Zou Y.**, Shay J., Wright W. Homologous recombination in human telomerase-positive and ALT cells occurs with the same frequency. **EMBO Rep.** 4:1138-1143.
- 2002 **Zou Y.**, Yi X., Wright W., Shay J., Human telomerase can immortalize Indian muntjac cells. *Exp. Cell Res.* 281:63-76.
- 2002 Wang P., Lee JW., Yu Y., Turner K., **Zou Y.**, Jackson-Cook CK., Povirk LF. Gene rearrangements induced by the DNA double-strand cleaving agent neocarzinostation: conservative non-homologous reciprocal exchanges in an otherwise stable genome. *Nucleic Acids Res.* 30:2639-2646.
- 2002 Steinert S., White D., **Zou Y.**, Shay J., Wright W. Telomere biology and cellular aging in nonhuman primate cells. *Exp. Cell Res.* 272:146-152.
- 2001 Baur J., **Zou Y.**, Shay J., Wright W. Telomere position effect in human cells. *Science* 292: 2075-2077.
- 2001 Ford L., **Zou Y.**, Shay J., Wright W. Telomerase can inhibit the recombination-based pathway of recombination-based pathway of telomere maintenance in human cells. *J. Biol. Chem.* 276:32198-32203.
- 2001 Shay J., **Zou Y.**, Wright W. Telomerase and cancer. *Hum Mol Genet.* 10:677-685.
- 1997 Wang P., Zhou RH., **Zou Y.**, Jackson-Cook C., Povirk L. Highly conservative reciprocal translocations formed by apparent joining of exchanged DNA double-strand break ends. *Proc. Natl. Acad. Sci. (USA)* 94:12018-12023.
- 1997 Zhou R., Wang P., **Zou Y.**, Jackson-Cook C., Povirk L. A precise interchromosomal reciprocal exchange between hot spots for cleavable complex formation by Topoisomerase II amsacrine-treated Chinese hamster ovary cells. *Cancer Res.* 57:4699-4702.

- 1995 **Zou Y.**, Lu BM., Lang JH. Comparison of four methods for the generation of immunoreactive fragments of a Monoclonal antibody (mAb) OC859 reactive with human ovarian epithelial cancer antigen. *J. Chinese Med. Sci.* (in English) 10:78-98.
- 1995 Lu BM., **Zou Y.** Radioimmunoimage and mAb-targeted radiotherapy of ovarian epithelial cancer patients using 131I-labeled OC859. *J. Beijing Med.* 17:95-105.
- 1994 **Zou Y.**, Lu B., Yang Z., Lang J. Preparation a mAb OC859 F(ab')₂ fragment conjugated with Adriamycin-albumin complex and study of its cytotoxic activity against ovarian epithelial cancer cells in vitro. *J. Chinese Med. Sci.* 74:640-648.
- 1994 **Zou Y.** Development of diagnosis and therapy using mAb OC859 in ovarian cancer patients. *Foreign Med. Sci.: Obstetrics and Gynecology* 21:204-224.

BOOK CHAPTER

Jalal SM., Gliem TJ, **Zou Y.** Multicolor FISH (M-FISH) or 24-Color FISH at *The AGT Cytogenetics Laboratory Manual* (4th edition, Lippincott-Raven, *in press*).

ORAL PRESENTATIONS, POSTER PRESENTATIONS AND PUBLISHED ABSTRACTS (Total 18)

- 2011 **Zou Y.**, Liu W, Ouahchi K., Saleki R. Jumping translocations of 3q21 in an acute monocytic leukemia (M5) patient reveals mechanisms of multistage telomere shortening in pathogenesis of AML. ACMG Annual Meeting, Vancouver, Canada.
- 2010 Leon E, **Zou Y.**, Basran R, Milunsky J. Distal partial monosomy 21 in an infant with apneic episodes and multiple congenital anomalies detected by SNP microarray. ACMG Annual Meeting, Albuquerque, NM.
- 2009 Flynn M, **Zou Y.**, Milunsky AM. Whole gene duplication of the *PQBPI* gene in Renpenning syndrome. ASHG Annual Meeting, Honolulu, Hawaii.
- 2008 **Zou Y.**, Huang XL., Milunsky JM. Further delineation of the critical region for the 9p-duplication syndrome. ACC Annual Meeting, Monterey, CA.
- 2007 **Zou Y.**, Sarkar G., Dawson B., Halder C., Schowalter D., Jenkins R., Jalal S. Differential gene and phenotypic expressions in two patients with identical 22q11.2 microduplications of a 3-Mb region based on microarray and microRNA analysis. ACMG Annual Meeting, Nashville, TN.
- 2007 Sheridan MB, Haldeman-Englert C, Jalali R, **Zou Y.**, Klaes R, Hacker A, Brown J, Tomkins D, Shaikh T, Zackai EH, Emanuel BS. A new recurrent translocation with 3:1 meiotic disjunction: the palindrome mediated t(8;22)(q24.13;q11.21). ASHG Annual Meeting, San Diego, CA.
- 2006 **Zou Y.**, Fink S., Stockero K., Paternoster S., Smoley S., Tun H., Reeder CB., Tefferi A., Dewald GW. Efficacy of conventional cytogenetics and FISH for *EGR1* to detect deletion 5q in hematological disorders and to assess response to treatment with Lenalidomide. ASH Annual Meeting, Orlando, FL. *Blood* 108(11), 666a.
- 2006 **Zou Y.**, Renan M., Jalal SM. 22q11.2 is a common breakpoint to multiple congenital reciprocal translocations about 15% of which have cryptic deletions. 11th international congress of human

genetics (ICHG), Brisbane, Australia.

- 2006 **Zou Y.**, Van Dyke DL., Chhabra HS., Feely MA., Thorland EC., Jalal SM. A case of mosaic ring 20 with no detectable deletion by FISH analysis: literature review and the etiology of the seizure disorder. ACMG annual meeting, San Diego, CA.
- 2004 **Zou Y.**, Wright W., Shay J. The regulation and timing of human telomere replication. AACR's "The Role of Telomeres and Telomerase in Cancer", San Francisco, CA.
- 2004 **Zou Y.**, Shay J., Wright W. Replication timing of individual human telomeres. Lost Pines Conference, UT M.D.Anderson Cancer Center Science Park, Smithville, TX.
- 2003 **Zou Y.**, Wright W, Shay, J. Early-replicating human centromeres. ASHG Annual Meeting. Am. J. Hum. Genet. 73: 313.
- 2002 **Zou Y.**, Wright W., Shay J. Human telomerase can immortalize Indian muntjac cells. AACR's "The Role of Telomeres and Telomerase in Cancer", San Francisco, CA.
- 2000 **Zou Y.**, Turner K., Jackson-Cook C. Characterization of structural chromosomal aberrations in hematological malignancies and brain tumors using spectral karyotyping (SKY). The 91st AACR Annual Meeting, San Francisco, CA, 41: 181.
- 1999 **Zou Y.**, Cui X., Jackson-Cook C., Li H. A high level of negative meiotic recombination interference in a large region on human chromosome 17 revealed by analyzing single sperm. ASHG Annual Meeting. Am. J. Hum. Genet. 65: A94.
- 1996 Yang H., Zeng X., **Zou Y.**, Niebuhr E., Lo W. Towards a map of natural recombination sites and molecular breakpoints using haploid chromatin FISH. ASHG Annual Meeting. Am. J. Hum. Genet. 59: A37.
- 1996 **Zou Y.**, Zhen X., Zhao FF., Huang SZ. Interphase nuclei FISH in amniotic fluid and chorionic villus sampling for prenatal diagnosis. 7th Ob/Gyn meeting, Santou.
- 1995 **Zou Y.**, Lian LJ. The expressions of CD2, CD4, CD8 and human anti-mouse Abs after radioimmunoimage and the effect of mAb OC859-targeted radiotherapy on the survival of 202 ovarian epithelial cancer patients. 6th Ob/Gyn meeting, Shanghai.