
BIOGRAPHICAL SKETCH

NAME Alan N. Houghton	POSITION TITLE Member and Attending Physician		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Stanford University, CA	BA	1970	Far East Stud./Anthro.
University of Connecticut School of Medicine, CT	MD	1974	Medicine

A. Positions:

1975-1976 Resident in Medicine, University of Connecticut
 1977-1979 Fellow in Medical Oncology, Memorial Sloan-Kettering Cancer Center (MSKCC)
 1980-1984 Research Associate, Sloan-Kettering Institute (SKI)
 1980-1988 Assistant Attending Physician, Memorial Hospital
 1980-1988 Assistant Professor, Cornell University Medical College
 1984-1988 Assistant Member, SKI
 1984-pres Head, Swim Across America Laboratory, SKI
 1988-1992 Associate Attending Physician, Memorial Hospital
 1988-1992 Associate Member, SKI
 1988-1992 Associate Professor, Cornell University Medical College & Graduate School
 1989-pres Chief, Clinical Immunology Service, Department of Medicine, MSKCC
 1992-pres Attending Physician, Memorial Hospital
 1992-pres Member, MSKCC
 1992-pres Professor of Medicine and Immunology, Cornell University Medical College & Graduate School
 1993- pres Editor, Journal of Experimental Medicine
 1994-2004 Chairman, Immunology Program (SKI Division), Cornell University Graduate School
 1994-2004 Chairman, Immunology Program, MSKCC
 1995-pres Head, Melanoma Disease Management Team, MSKCC
 2006-pres Vice-Chair, Department of Medicine, MSKCC

B. Honors:

American Cancer Society Fellowship, 1977-78; National Research Service Award, 1979-80; Boyer Award in preclinical Investigation, 1987; Elected to The American Society for Clinical Investigation, 1989; Enid A. Haupt Chair in Clinical Investigation, 1994-2000; listed among "Best Doctors in America" Connolly and "Best Cancer Doctors" Ladies Home Journal, 1994-present; Elected to The American Association of Physicians, 1997; Chester Stock Award in Cancer Investigation, 1998; Virginia and Daniel K. Ludwig Clinical Chair, 2000-present; Distinguished Achievement Award, American Skin Association, 2001; Academy of Cancer Immunology, 1998; The Society Award in Clinical Medicine, 2002; Muscular Dystrophy Association Distinguished Achievement Award, 2003

C. Recent peer-reviewed publications (from >250 publications, including 5 books):

- Clynes, R., Takechi, Y., Moroi, Y., Houghton, A., and Ravetch, J.V. 1998. Fc receptors are required in passive and active immunity to melanoma. *Proc Natl Acad Sci U S A* 95:652-656.
- Dyall, R., Bowne, W.B., Weber, L.W., LeMaout, J., Szabo, P., Moroi, Y., Piskun, G., Lewis, J.J., Houghton, A.N., and Nikolic-Zugic, J. 1998. Heteroclitic immunization induces tumor immunity. *J Exp Med* 188:1553-1561.
- Ghossein, R.A., Coit, D., Brennan, M., Zhang, Z.F., Wang, Y., Bhattacharya, S., Houghton, A., and Rosai, J. 1998. Prognostic significance of peripheral blood and bone marrow tyrosinase messenger RNA in malignant melanoma. *Clin Cancer Res* 4:419-428.
- Hirschowitz, E.A., Leonard, S., Song, W., Ferris, B., Leopold, P.L., Lewis, J.J., Bowne, W.B., Wang, S., Houghton, A.N., and Crystal, R.G. 1998. Adenovirus-mediated expression of melanoma antigen gp75 as immunotherapy for metastatic melanoma. *Gene Ther* 5:975-983.
- Houghton, A., Coit, D., Bloomer, W., Buzaid, A., Chu, D., Eisenburgh, B., Guitart, J., Johnson, T., Miller, S., Sener, S., et al. 1998. NCCN melanoma practice guidelines. *National Comprehensive Cancer Network. Oncology (Williston Park)* 12:153-177.
- Houghton, A.N., and Lloyd, K.O. 1998. Stuck in the MUC on the long and winding road. *Nat Med* 4:270-271.
- Weber, L.W., Bowne, W.B., Wolchok, J.D., Srinivasan, R., Qin, J., Moroi, Y., Clynes, R., Song, P., Lewis, J.J., and Houghton, A.N. 1998. Tumor immunity and autoimmunity induced by immunization with homologous DNA. *J Clin Invest* 102:1258-1264.
- Wolchok, J.D., Livingston, P.O., and Houghton, A.N. 1998. Vaccines and other adjuvant therapies for melanoma. *Hematol Oncol Clin North Am* 12:835-848, vii.
- Xu, Y., Vijayasaradhi, S., and Houghton, A.N. 1998. The cytoplasmic tail of the mouse brown locus product determines intracellular stability and export from the endoplasmic reticulum. *J Invest Dermatol* 110:324-331.
- Bowne, W.B., Srinivasan, R., Wolchok, J.D., Hawkins, W.G., Blachere, N.E., Dyall, R., Lewis, J.J., and Houghton, A.N. 1999. Coupling and uncoupling of tumor immunity and autoimmunity. *J Exp Med* 190:1717-1722.
- Bowne, W.B., Wolchok, J.D., Hawkins, W.G., Srinivasan, R., Gregor, P., Blachere, N.E., Moroi, Y., Engelhorn, M.E., Houghton, A.N., and Lewis, J.J. 1999. Injection of DNA encoding granulocyte-macrophage colony-stimulating factor recruits dendritic cells for immune adjuvant effects. *Cytokines Cell Mol Ther* 5:217-225.
- Grant, S.C., Kris, M.G., Houghton, A.N., and Chapman, P.B. 1999. Long survival of patients with small cell lung cancer after adjuvant treatment with the anti-idiotypic antibody BEC2 plus Bacillus Calmette-Guerin. *Clin Cancer Res* 5:1319-1323.
- Chapman, P.B., Einhorn, L.H., Meyers, M.L., Saxman, S., Destro, A.N., Panageas, K.S., Begg, C.B., Agarwala, S.S., Schuchter, L.M., Ernstoff, M.S., et al. 1999. Phase III multicenter randomized trial of the Dartmouth regimen versus dacarbazine in patients with metastatic melanoma. *J Clin Oncol* 17:2745-2751.
- Kaminski, M.J., MacKenzie, C.R., Mooibroek, M.J., Dahms, T.E., Hiramata, T., Houghton, A.N., Chapman, P.B., and Evans, S.V. 1999. The role of homophilic binding in anti-tumor antibody R24 recognition of molecular surfaces. Demonstration of an intermolecular beta-sheet interaction between vh domains. *J Biol Chem* 274:5597-5604.
- Nasi, M.L., Lieberman, P., Busam, K.J., Prieto, V., Panageas, K.S., Lewis, J.J., Houghton, A.N., and Chapman, P.B. 1999. Intradermal injection of granulocyte-macrophage colony-stimulating factor (GM-CSF) in patients with metastatic melanoma recruits dendritic cells. *Cytokines Cell Mol Ther* 5:139-144.
- Wang, S., Bartido, S., Yang, G., Qin, J., Moroi, Y., Panageas, K.S., Lewis, J.J., and Houghton, A.N. 1999. A role for a melanosome transport signal in accessing the MHC class II presentation pathway and in eliciting CD4+ T cell responses. *J Immunol* 163:5820-5826.
- Wesley, U.V., Albino, A.P., Tiwari, S., and Houghton, A.N. 1999. A role for dipeptidyl peptidase IV in suppressing the malignant phenotype of melanocytic cells. *J Exp Med* 190:311-322.
- Yao, T.J., Meyers, M., Livingston, P.O., Houghton, A.N., and Chapman, P.B. 1999. Immunization of melanoma patients with BEC2-keyhole limpet hemocyanin plus BCG intradermally followed by intravenous booster immunizations with BEC2 to induce anti-GD3 ganglioside antibodies. *Clin Cancer Res* 5:77-81.

- Balch, C.M., Buzaid, A.C., Atkins, M.B., Cascinelli, N., Coit, D.G., Fleming, I.D., Houghton, A., Jr., Kirkwood, J.M., Mihm, M.F., Morton, D.L., et al. 2000. A new American Joint Committee on Cancer staging system for cutaneous melanoma. *Cancer* 88:1484-1491.
- Castellino, F., Boucher, P.E., Eichelberg, K., Mayhew, M., Rothman, J.E., Houghton, A.N., and Germain, R.N. 2000. Receptor-mediated uptake of antigen/heat shock protein complexes results in major histocompatibility complex class I antigen presentation via two distinct processing pathways. *J Exp Med* 191:1957-1964.
- Gilewski, T., Adluri, S., Ragupathi, G., Zhang, S., Yao, T.J., Panageas, K., Moynahan, M., Houghton, A., Norton, L., and Livingston, P.O. 2000. Vaccination of high-risk breast cancer patients with mucin-1 (MUC1) keyhole limpet hemocyanin conjugate plus QS-21. *Clin Cancer Res* 6:1693-1701.
- Dhodapkar, M.V., Young, J.W., Chapman, P.B., Cox, W.I., Fonteneau, J.F., Amigorena, S., Houghton, A.N., Steinman, R.M., and Bhardwaj, N. 2000. Paucity of functional T-cell memory to melanoma antigens in healthy donors and melanoma patients. *Clin Cancer Res* 6:4831-4838.
- Hawkins, W.G., Gold, J.S., Dyll, R., Wolchok, J.D., Hoos, A., Bowne, W.B., Srinivasan, R., Houghton, A.N., and Lewis, J.J. 2000. Immunization with DNA coding for gp100 results in CD4 T-cell independent antitumor immunity. *Surgery* 128:273-280.
- Houghton, A.N., and Scheinberg, D.A. 2000. Monoclonal antibody therapies-a 'constant' threat to cancer. *Nat Med* 6:373-374.
- Janetzki, S., Song, P., Gupta, V., Lewis, J.J., and Houghton, A.N. 2000. Insect cells as HLA-restricted antigen-presenting cells for the IFN-gamma elispot assay. *J Immunol Methods* 234:1-12.
- Klimek, V.M., Wolchok, J.D., Chapman, P.B., Houghton, A.N., and Hwu, W.J. 2000. Systemic chemotherapy. *Clin Plast Surg* 27:451-461, ix-x.
- Lewis, J.J., Janetzki, S., Schaed, S., Panageas, K.S., Wang, S., Williams, L., Meyers, M., Butterworth, L., Livingston, P.O., Chapman, P.B., et al. 2000. Evaluation of CD8(+) T-cell frequencies by the Elispot assay in healthy individuals and in patients with metastatic melanoma immunized with tyrosinase peptide. *Int J Cancer* 87:391-398.
- Moroi, Y., Mayhew, M., Trcka, J., Hoe, M.H., Takechi, Y., Hartl, F.U., Rothman, J.E., and Houghton, A.N. 2000. Induction of cellular immunity by immunization with novel hybrid peptides complexed to heat shock protein 70. *Proc Natl Acad Sci U S A* 97:3485-3490.
- Schnell, S., Young, J.W., Houghton, A.N., and Sadelain, M. 2000. Retrovirally transduced mouse dendritic cells require CD4+ T cell help to elicit antitumor immunity: Implications for the clinical use of dendritic cells. *J Immunol* 164:1243-1250.
- Balch, C.M., Buzaid, A.C., Soong, S.J., Atkins, M.B., Cascinelli, N., Coit, D.G., Fleming, I.D., Gershenwald, J.E., Houghton, A., Jr., Kirkwood, J.M., et al. 2001. Final version of the American Joint Committee on Cancer staging system for cutaneous melanoma. *J Clin Oncol* 19:3635-3648.
- Gilewski, T., Ragupathi, G., Bhuta, S., Williams, L.J., Musselli, C., Zhang, X.F., Bornmann, W.G., Spassova, M., Bencsath, K.P., Panageas, K.S., et al. 2001. Immunization of metastatic breast cancer patients with a fully synthetic globo H conjugate: a phase I trial. *Proc Natl Acad Sci U S A* 98:3270-3275.
- Houghton, A.N., Gold, J.S., and Blachere, N.E. 2001. Immunity against cancer: lessons learned from melanoma. *Curr Opin Immunol* 13:134-140.
- Polsky, C., Cordon-Cardo, C., and Houghton, A.N. 2001. *Molecular Biology of Melanoma*. In *Molecular Biology of Cancer*. Ed: Mendelson J. Philadelphia: W.B. Saunders Company.
- Polsky, D., Bastian, B.C., Hazan, C., Melzer, K., Pack, J., Houghton, A., Busam, K., Cordon-Cardo, C., and Osman, I. 2001. HDM2 protein overexpression, but not gene amplification, is related to tumorigenesis of cutaneous melanoma. *Cancer Res* 61:7642-7646.
- Wolchok, J.D., Srinivasan, R., Perales, M.A., Houghton, A.N., Bowne, W.B., and Blachere, N.E. 2001. Alternative roles for interferon-gamma in the immune response to DNA vaccines encoding related melanosomal antigens. *Cancer Immun* 1:9.
- Xu, Y., Bartido, S., Setaluri, V., Qin, J., Yang, G., and Houghton, A.N. 2001. Diverse roles of conserved asparagine-linked glycan sites on tyrosinase family glycoproteins. *Exp Cell Res* 267:115-125.
- Hawkins, W.G., Gold, J.S., Blachere, N.E., Bowne, W.B., Hoos, A., Lewis, J.J., and Houghton, A.N. 2002. Xenogeneic DNA immunization in melanoma models for minimal residual disease. *J Surg Res* 102:137-143.
- Houghton, A.N., and Polsky, D. 2002. Focus on melanoma. *Cancer Cell* 2:275-278.
- Hwu, W.J., Krown, S.E., Panageas, K.S., Menell, J.H., Chapman, P.B., Livingston, P.O., Williams, L.J., Quinn, C.J., and Houghton, A.N. 2002. Temozolomide plus thalidomide in patients with advanced melanoma: results of a dose-finding trial. *J Clin Oncol* 20:2610-2615.

- Perales, M.A., Blachere, N.E., Engelhorn, M.E., Ferrone, C.R., Gold, J.S., Gregor, P.D., Noffz, G., Wolchok, J.D., and Houghton, A.N. 2002. Strategies to overcome immune ignorance and tolerance. *Semin Cancer Biol* 12:63-71.
- Perales, M.A., Fantuzzi, G., Goldberg, S.M., Turk, M.J., Mortazavi, F., Busam, K., Houghton, A.N., Dinarello, C.A., and Wolchok, J.D. 2002. GM-CSF DNA induces specific patterns of cytokines and chemokines in the skin: implications for DNA vaccines. *Cytokines Cell Mol Ther* 7:125-133.
- Polsky, D., Melzer, K., Hazan, C., Panageas, K.S., Busam, K., Drobnjak, M., Kamino, H., Spira, J.G., Kopf, A.W., Houghton, A., et al. 2002. HDM2 protein overexpression and prognosis in primary malignant melanoma. *J Natl Cancer Inst* 94:1803-1806.
- Schaed, S.G., Klimek, V.M., Panageas, K.S., Musselli, C.M., Butterworth, L., Hwu, W.J., Livingston, P.O., Williams, L., Lewis, J.J., Houghton, A.N., et al. 2002. T-cell responses against tyrosinase 368-376(370D) peptide in HLA*A0201+ melanoma patients: randomized trial comparing incomplete Freund's adjuvant, granulocyte macrophage colony-stimulating factor, and QS-21 as immunological adjuvants. *Clin Cancer Res* 8:967-972.
- Srinivasan, R., Houghton, A.N., and Wolchok, J.D. 2002. Induction of autoantibodies against tyrosinase-related proteins following DNA vaccination: unexpected reactivity to a protein paralogue. *Cancer Immun* 2:8.
- Trcka, J., Moroi, Y., Clynes, R.A., Goldberg, S.M., Bergtold, A., Perales, M.A., Ma, M., Ferrone, C.R., Carroll, M.C., Ravetch, J.V., et al. 2002. Redundant and alternative roles for activating Fc receptors and complement in an antibody-dependent model of autoimmune vitiligo. *Immunity* 16:861-868.
- Turk, M.J., Wolchok, J.D., Guevara-Patino, J.A., Goldberg, S.M., and Houghton, A.N. 2002. Multiple pathways to tumor immunity and concomitant autoimmunity. *Immunol Rev* 188:122-135.
- Balch, C.M., Buzaid, A.C., Soong, S.J., Atkins, M.B., Cascinelli, N., Coit, D.G., Fleming, I.D., Gershenwald, J.E., Houghton, A., Jr., Kirkwood, J.M., et al. 2003. New TNM melanoma staging system: linking biology and natural history to clinical outcomes. *Semin Surg Oncol* 21:43-52.
- Bergman, P.J., McKnight, J., Novosad, A., Charney, S., Farrelly, J., Craft, D., Wulderk, M., Jeffers, Y., Sadelain, M., Hohenhaus, A.E., et al. 2003. Long-term survival of dogs with advanced malignant melanoma after DNA vaccination with xenogeneic human tyrosinase: a phase I trial. *Clin Cancer Res* 9:1284-1290.
- Balch, C.M., Houghton, A.N., Sober, A.J., and Soong, S.J. 2003. *Cutaneous Melanoma, 4th Edition*. St. Louis: QMP, Inc. 750 pp.
- Gold, J.S., Ferrone, C.R., Guevara-Patino, J.A., Hawkins, W.G., Dyal, R., Engelhorn, M.E., Wolchok, J.D., Lewis, J.J., and Houghton, A.N. 2003. A single heteroclitic epitope determines cancer immunity after xenogeneic DNA immunization against a tumor differentiation antigen. *J Immunol* 170:5188-5194.
- Gorden, A., Osman, I., Gai, W., He, D., Huang, W., Davidson, A., Houghton, A.N., Busam, K., and Polsky, D. 2003. Analysis of BRAF and N-RAS mutations in metastatic melanoma tissues. *Cancer Res* 63:3955-3957.
- Guevara-Patino, J.A., Turk, M.J., Wolchok, J.D., and Houghton, A.N. 2003. Immunity to cancer through immune recognition of altered self: studies with melanoma. *Adv Cancer Res* 90:157-177.
- Hawkins, W.G., Trcka, J., Segal, N., Blachere, N.E., Gold, J.S., Moroi, Y., Bowne, W.B., Lewis, J.J., Wolchok, J.D., and Houghton, A.N. 2003. The role of lipopolysaccharide in T-cell responses following DNA vaccination. *Vaccine* 21:1548-1553.
- Hwu, W.J., Crown, S.E., Menell, J.H., Panageas, K.S., Merrell, J., Lamb, L.A., Williams, L.J., Quinn, C.J., Foster, T., Chapman, P.B., et al. 2003. Phase II study of temozolomide plus thalidomide for the treatment of metastatic melanoma. *J Clin Oncol* 21:3351-3356.
- Ramirez-Montagut, T., Turk, M.J., Wolchok, J.D., Guevara-Patino, J.A., and Houghton, A.N. 2003. Immunity to melanoma: unraveling the relation of tumor immunity and autoimmunity. *Oncogene* 22:3180-3187.
- Segal, N.H., Pavlidis, P., Antonescu, C.R., Maki, R.G., Noble, W.S., DeSantis, D., Woodruff, J.M., Lewis, J.J., Brennan, M.F., Houghton, A.N., et al. 2003. Classification and subtype prediction of adult soft tissue sarcoma by functional genomics. *Am J Pathol* 163:691-700.
- Segal, N.H., Pavlidis, P., Noble, W.S., Antonescu, C.R., Viale, A., Wesley, U.V., Busam, K., Gallardo, H., DeSantis, D., Brennan, M.F., et al. 2003. Classification of clear-cell sarcoma as a subtype of melanoma by genomic profiling. *J Clin Oncol* 21:1775-1781.
- Balch, C.M., Soong, S.J., Atkins, M.B., Buzaid, A.C., Cascinelli, N., Coit, D.G., Fleming, I.D., Gershenwald, J.E., Houghton, A., Jr., Kirkwood, J.M., et al. 2004. An evidence-based staging system for cutaneous melanoma. *CA Cancer J Clin* 54:131-149; quiz 182-134.
- Gregor, P.D., Wolchok, J.D., Ferrone, C.R., Buchinshky, H., Guevara-Patino, J.A., Perales, M.A., Mortazavi, F., Bacich, D., Heston, W., Latouche, J.B., et al. 2004. CTLA-4 blockade in combination

- with xenogeneic DNA vaccines enhances T-cell responses, tumor immunity and autoimmunity to self antigens in animal and cellular model systems. *Vaccine* 22:1700-1708.
- Houghton, A.N. 2004. LIGHTing the way for tumor immunity. *Nat Immunol* 5:123-124.
- Houghton, A.N., and Guevara-Patino, J.A. 2004. Immune recognition of self in immunity against cancer. *J Clin Invest* 114:468-471.
- Janetzki, S., Schaed, S., Blachere, N.E., Ben-Porat, L., Houghton, A.N., and Panageas, K.S. 2004. Evaluation of Elispot assays: influence of method and operator on variability of results. *J Immunol Methods* 291:175-183.
- Muriglian, S.J., Ramirez-Montagut, T., Alpdogan, O., Van Huystee, T.W., Eng, J.M., Hubbard, V.M., Kochman, A.A., Tjoe, K.H., Riccardi, C., Pandolfi, P.P., et al. 2004. GITR activation induces an opposite effect on alloreactive CD4(+) and CD8(+) T cells in graft-versus-host disease. *J Exp Med* 200:149-157.
- Ramirez-Montagut, T., Blachere, N.E., Sviderskaya, E.V., Bennett, D.C., Rettig, W.J., Garin-Chesa, P., and Houghton, A.N. 2004. FAPalpha, a surface peptidase expressed during wound healing, is a tumor suppressor. *Oncogene* 23:5435-5446.
- Turk, M.J., Guevara-Patino, J.A., Rizzuto, G.A., Engelhorn, M.E., Sakaguchi, S., and Houghton, A.N. 2004. Concomitant tumor immunity to a poorly immunogenic melanoma is prevented by regulatory T cells. *J Exp Med* 200:771-782.
- Wesley, U.V., Tiwari, S., and Houghton, A.N. 2004. Role for dipeptidyl peptidase IV in tumor suppression of human non small cell lung carcinoma cells. *Int J Cancer* 109:855-866.
- Bergman, P.J., Camps-Palau, M.A., McKnight, J.A., Leibman, N.F., Craft, D.M., Leung, C., Liao, J., Riviere, I., Sadelain, M., Hohenhaus, A.E., et al. 2005. Development of a xenogeneic DNA vaccine program for canine malignant melanoma at the Animal Medical Center. *Vaccine*.
- Goldberg, S.M., Bartido, S.M., Gardner, J.P., Guevara-Patino, J.A., Montgomery, S.C., Perales, M.A., Maughan, M.F., Dempsey, J., Donovan, G.P., Olson, W.C., et al. 2005. Comparison of two cancer vaccines targeting tyrosinase: plasmid DNA and recombinant alphavirus replicon particles. *Clin Cancer Res* 11:8114-8121.
- Gregor, P.D., Wolchok, J.D., Turaga, V., Latouche, J.B., Sadelain, M., Bacich, D., Heston, W.D., Houghton, A.N., and Scher, H.I. 2005. Induction of autoantibodies to syngeneic prostate-specific membrane antigen by xenogeneic vaccination. *Int J Cancer* 116:415-421.
- Houghton, A.N., Uchi, H., and Wolchok, J.D. 2005. The role of the immune system in early epithelial carcinogenesis: B-ware the double-edged sword. *Cancer Cell* 7:403-405.
- Hwu, W.J., Lis, E., Menell, J.H., Panageas, K.S., Lamb, L.A., Merrell, J., Williams, L.J., Krown, S.E., Chapman, P.B., Livingston, P.O., et al. 2005. Temozolomide plus thalidomide in patients with brain metastases from melanoma: a phase II study. *Cancer* 103:2590-2597.
- Palomba, M.L., Roberts, W.K., Dao, T., Manukian, G., Guevara-Patino, J.A., Wolchok, J.D., Scheinberg, D.A., and Houghton, A.N. 2005. CD8+ T-cell-dependent immunity following xenogeneic DNA immunization against CD20 in a tumor challenge model of B-cell lymphoma. *Clin Cancer Res* 11:370-379.
- Posnett, D.N., Engelhorn, M.E., and Houghton, A.N. 2005. Antiviral T cell responses: phalanx or multipronged attack? *J Exp Med* 201:1881-1884.
- Segal, N.H., Blachere, N.E., Guevara-Patino, J.A., Gallardo, H.F., Shiu, H.Y., Viale, A., Antonescu, C.R., Wolchok, J.D., and Houghton, A.N. 2005. Identification of cancer-testis genes expressed by melanoma and soft tissue sarcoma using bioinformatics. *Cancer Immun* 5:2.
- Segal, N.H., Blachere, N.E., Shiu, H.Y., Leejee, S., Antonescu, C.R., Lewis, J.J., Wolchok, J.D., and Houghton, A.N. 2005. Antigens recognized by autologous antibodies of patients with soft tissue sarcoma. *Cancer Immun* 5:4.
- Ben-Porat, L., Panageas, K.S., Hanlon, C., Patel, A., Halpern, A., Houghton, A.N., and Coit, D. 2006. Estimates of stage-specific survival are altered by changes in the 2002 American Joint Committee on Cancer staging system for melanoma. *Cancer* 106:163-171.
- Cohen, A.D., Diab, A., Perales, M.A., Wolchok, J.D., Rizzuto, G., Merghoub, T., Huggins, D., Liu, C., Turk, M.J., Restifo, N.P., et al. 2006. Agonist anti-GITR antibody enhances vaccine-induced CD8(+) T-cell responses and tumor immunity. *Cancer Res* 66:4904-4912.
- Engelhorn, M.E., Guevara-Patino, J.A., Noffz, G., Hooper, A.T., Lou, O., Gold, J.S., Kappel, B.J., and Houghton, A.N. 2006. Autoimmunity and tumor immunity induced by immune responses to mutations in self. *Nat Med* 12:198-206.
- Ferrone, C.R., Perales, M.A., Goldberg, S.M., Somberg, C.J., Hirschhorn-Cymerman, D., Gregor, P.D., Turk, M.J., Ramirez-Montagut, T., Gold, J.S., Houghton, A.N., et al. 2006. Adjuvantivity of plasmid DNA encoding cytokines fused to immunoglobulin Fc domains. *Clin Cancer Res* 12:5511-5519.

- Guevara-Patino, J.A., Engelhorn, M.E., Turk, M.J., Liu, C., Duan, F., Rizzuto, G., Cohen, A.D., Merghoub, T., Wolchok, J.D., and Houghton, A.N. 2006. Optimization of a self antigen for presentation of multiple epitopes in cancer immunity. *J Clin Invest* 116:1382-1390.
- Houghton, A.N., Coit, D.G., Daud, A., Dilawari, R.A., Dimaio, D., Gollob, J.A., Haas, N.B., Halpern, A., Johnson, T.M., Kashani-Sabet, M., et al. 2006. Melanoma. *J Natl Compr Canc Netw* 4:666-684.
- Hwu, W.J., Panageas, K.S., Menell, J.H., Lamb, L.A., Aird, S., Krown, S.E., Williams, L.J., Chapman, P.B., Livingston, P.O., Wolchok, J.D., et al. 2006. Phase II study of temozolomide plus pegylated interferon-alpha-2b for metastatic melanoma. *Cancer* 106:2445-2451.
- Krown, S.E., Niedzwiecki, D., Hwu, W.J., Hodgson, L., Houghton, A.N., and Haluska, F.G. 2006. Phase II study of temozolomide and thalidomide in patients with metastatic melanoma in the brain: high rate of thromboembolic events (CALGB 500102). *Cancer* 107:1883-1890.
- Liao, J.C., Gregor, P., Wolchok, J.D., Orlandi, F., Craft, D., Leung, C., Houghton, A.N., and Bergman, P.J. 2006. Vaccination with human tyrosinase DNA induces antibody responses in dogs with advanced melanoma. *Cancer Immun* 6:8.
- Perales, M.A., Diab, A., Cohen, A.D., Huggins, D.W., Guevara-Patino, J.A., Hubbard, V.M., Engelhorn, M.E., Kochman, A.A., Eng, J.M., Mortazavi, F., et al. 2006. DNA immunization against tissue-restricted antigens enhances tumor immunity after allogeneic hemopoietic stem cell transplantation. *J Immunol* 177:4159-4167.
- Ramirez-Montagut, T., Chow, A., Hirschhorn-Cymerman, D., Terwey, T.H., Kochman, A.A., Lu, S., Miles, R.C., Sakaguchi, S., Houghton, A.N., and van den Brink, M.R. 2006. Glucocorticoid-Induced TNF Receptor Family Related Gene Activation Overcomes Tolerance/Ignorance to Melanoma Differentiation Antigens and Enhances Antitumor Immunity. *J Immunol* 176:6434-6442.
- Roberts, J.D., Niedzwiecki, D., Carson, W.E., Chapman, P.B., Gajewski, T.F., Ernstoff, M.S., Hodi, F.S., Shea, C., Leong, S.P., Johnson, J., et al. 2006. Phase 2 study of the g209-2M melanoma peptide vaccine and low-dose interleukin-2 in advanced melanoma: Cancer and Leukemia Group B 509901. *J Immunother* 29:95-101.
- Uchi, H., Stan, R., Turk, M.J., Engelhorn, M.E., Rizzuto, G.A., Goldberg, S.M., Wolchok, J.D., and Houghton, A.N. 2006. Unraveling the complex relationship between cancer immunity and autoimmunity: lessons from melanoma and vitiligo. *Adv Immunol* 90:215-241.
- Yuan, J., Gallardo, H., Rasalan, T., Ranganathan, R., Wang, J., Zhang, Y., Panageas, K., Stan, R., Young, J., Houghton, A., et al. 2006. In vitro expansion of Ag-specific T cells by HLA-A*0201-transfected K562 cells for immune monitoring. *Cytotherapy* 8:498-508.
- Yuan, J., Latouche, J.B., Hodges, J., Houghton, A.N., Heller, G., Sadelain, M., Riviere, I., and Young, J.W. 2006. Langerhans-type dendritic cells genetically modified to express full-length antigen optimally stimulate CTLs in a CD4-dependent manner. *J Immunol* 176:2357-2365.