

## CURRICULUM VITAE

### **Molly A. Brewer, D.V.M., M.D., M.S.**

Associate Professor, Department of Obstetrics and Gynecology,  
Carole and Ray Neag Comprehensive Cancer Center  
University of Connecticut Health Center  
Director, Division of Gynecologic Oncology

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Farmington, CT 06030-1614

**LICENSURE(s):** Oregon, No. MD17780 (issued 1992); Texas, No. 18929 (issued 1995);  
Arizona, No. 29614 (issued 2001); Connecticut, No. 044786 (issued  
2006)

**BOARD CERTIFICATION:** Obstetrics and Gynecology - 1999  
Gynecologic Oncology - 2001

**HOSPITAL PRIVILEGES:** University Medical Center (Arizona)  
University Medical Center (Connecticut)

### **EDUCATION:**

1997 - 1999 University of Michigan School of Public Health  
Master of Sciences in "Statistical Analysis and  
Clinical Research Design"

1987 - 1991 State University of New York @ Syracuse  
College of Medicine  
Syracuse, New York  
Doctor of Medicine

1973 - 1976 Texas A & M University  
College of Veterinary Medicine  
College Station, Texas  
Doctor of Veterinary Medicine

1971 - 1973 Texas A & M University, College Station, Texas  
Biochemistry, Microbiology, Biological Sciences  
Bachelor of Science

1969 - 1971 Tufts University  
Medford, Massachusetts  
Major: Biology

### **POSTGRADUATE TRAINING:**

1995 - 1997 Fellow, Department of Gynecologic Oncology  
UT MD Anderson Cancer Center, Houston, Texas  
*Chairman, J. Taylor Wharton, M. D.*

1991 - 1995 Resident, Obstetrics and Gynecology  
Oregon Health Sciences, Portland, Oregon  
*Chairman, Paul Kirk, M. D.*

July, 1993

Galloway Fellow  
Memorial Sloan-Kettering Cancer Center  
New York, New York

## **HONORS AND AWARDS:**

1971-1976	Dean's List, Texas A & M University
1973	Honor Society for the Biological Sciences, Texas A & M University
1987	Academic Promotions Committee, SUNY
1990	Alpha Omega Alpha Honor Society
1991	Robert E.L. Nesbitt, Jr., M. D. Student Award for Exceptional OB/GYN Student
1993	Hal Lee, M. D. Scholarship Award
1993	Galloway Fellow, Memorial Sloan-Kettering Cancer Center
1994	Berlex Foundation Participant Epidemiology and Clinical Research Designate
2001-2003	Dean's Physician-Scientist Career Development Award
2001-2002	Dean's Physician-Scientist Career Development Award/Nielsen Award
2000	Taskforce on the Treatment of Intraepithelial Neoplasia, AACR, U.S. Food and Drug Administration
2003	Listed in Who's Who in Prevention, Arizona Cancer Center
2002-2003	Co-Chair of United Engineering Foundation Conference, "Advances in Optics for Biotechnology, Medicine and Surgery", August 3-8, 2003, Banff, Canada

## ***Memberships and Committee Assignments***

1987	Academic Promotions Committee, SUNY
1999-present	American Radium Society (ARS)
2000	Member, Taskforce on the Treatment of Intraepithelial Neoplasia, AACR U.S. Food and Drug Administration
2000-present	Gynecologic Oncology Group (GOG)
2001-2006	Member, Arizona Cancer Center (AZCC)
2001-present	American Society of Clinical Oncology (ASCO)
2002-present	Society of Gynecologic Oncologist (SGO)
2002-present	American Association for Cancer Research (AACR)
2002-present	Southwest Oncology Group (SWOG)
2004	Society of Gynecologic Oncologists 2004 Program Committee
2004	AACR Prevention Meeting Scientific Committee
2004-present	Ovarian Cancer Research Fund NY, NY Scientific Committee
2003-present	Member, National Advisory Board for the Center for Gamma-Ray Imaging
2006-present	Executive Committee, Neag Comp. Cancer Center, UConn School of Med.
2006-present	Cancer Center Research Cabinet Committee

## **PROFESSIONAL APPOINTMENTS:**

1976-1981	Associate Veterinarian Crestview Animal Clinic New London, Pennsylvania
1981-1987	Vice President and Partner Vestal Veterinary Hospital, P.C. Vestal, New York (Companion Animal Practice)
1987-1991	Part-time Veterinarian Stack Hospital for Pets, Nottingham Pet Clinic Town and Country Hospital for Pets Syracuse, New York
1991-1995	Resident, OB/GYN, Oregon Health Sciences University Portland, Oregon
1992-1993	Emergency Coverage, Emanuel Certified Nurse Midwives Portland, Oregon
1992-1994	Consultant, Feminist Women's Health Center Portland, Oregon
1995-1997	Fellow Department of Gynecologic Oncology The University of Texas, M.D. Anderson Cancer Center Houston, Texas
1997-2001	Assistant Professor The Department of Gynecologic Oncology The University of Texas, M.D. Anderson Cancer Center
1999-2001	Assistant Professor and Division Director Department of Obstetrics and Gynecology The University of Texas-Houston Medical School Houston, Texas
2001-2003	Assistant Professor and Division Director Department of Obstetrics and Gynecology Division of Gynecologic Oncology University of Arizona and Arizona Cancer Center Tucson, Arizona
2003-2006	Adjunct Associate Professor Department of Gynecologic Oncology The University of Texas, M.D. Anderson Cancer Center Houston, Texas
2003-2006	Associate Professor and Division Director Department of Obstetrics and Gynecology Division of Gynecologic Oncology University of Arizona and Arizona Cancer Center Tucson, Arizona
2003-2006	Associate Professor Biomedical Engineering University of Arizona Tucson, Arizona

## PROFESSIONAL APPOINTMENTS CONTINUED:

2003-2006	Adjunct Associate Professor Department of Gynecologic Oncology The University of Texas, M.D. Anderson Cancer Center Houston, Texas
2004-2006	Associate Professor Cancer Biology University of Arizona Tucson, Arizona
2006-present	Associate Professor Department of Obstetrics and Gynecology Director, Division of Gynecologic Oncology University of Connecticut Health Center Carole and Ray Neag Comprehensive Cancer Center Farmington, CT
2007 – present	Research Professor Electrical and Computer Engineering Department University of Connecticut Storrs, CT

## ACADEMIC APPOINTMENTS:

### *Departmental*

2001	Chairperson, Research Committee
2001	Faculty Advisor, Journal Club
2001	Division Director Gynecologic Oncology
2001	Chairperson, Departmental/College Review Committee
2002	Executive Committee for the Department of OB-GYN
2003	Promotion to Associate Professor with tenure
2003	Department Promotion and Tenure Committee
2004	Executive Leadership Group (an appointed, oversight group)

### *College*

2001-2006	Faculty Advisor, 3 <sup>rd</sup> year medical students
2002-2003	Urology Search Committee for Department Head, Surgery
2002-2003	Genetics Review Committee
2002-2003	Search Committee for Dean of the College of Medicine
2002-2003	Association for Women Faculty
2003-2006	Women's Center of Excellence Research Committee
2003-2006	College of Medicine Honors and Awards Committee
2003	Search Committee, Director for Institute for Biomedical Science and Biotechnology
2004-2006	Co-Director High Risk Breast and Ovarian Clinic
2003-2005	National Advisory Board for the Center for Gamma-Ray Imaging Blue Ribbon Committee
2005-2006	Institutional Review Board (IRB) Committee Alternate 2005
2005	Advanced Research Institute for Biomedical Imaging Organizing Committee

### ***Intramural***

1999-2001 Co-Director of Women's Screening & Genetics Clinic, MD Anderson Cancer Center, Houston  
2001-2003 Adjunct Assistant Professor, Department of Gynecologic Oncology, MD Anderson Cancer, Houston  
2003-present Adjunct Associate Professor, Department of Gynecologic Oncology, MD Anderson Cancer, Houston

### • ***Other***

#### *Arizona Cancer Center*

2001-2006 Director, Gynecologic Oncology  
2001-2006 Comprehensive Member of the Arizona Cancer Center  
2003-2005 Better Than Ever Scientific Committee  
2003-present Faculty Member, Biomedical Engineering Graduate Interdisciplinary Program  
2004-present Faculty Member, Cancer Biology Graduate Interdisciplinary Program

### • ***Graduate Students***

1998 Thesis Committee, Douglas Heintzelman, MS in Engineering, UT at Austin  
2003-2007 PhD Comprehensive Exam and Dissertation Committee, Nathaniel Kirkpatrick, PhD Biomedical Engineering candidate  
2003-2005 Thesis Advisor, Jamie Dibble, MS completed June 2005 Biomedical Engineering  
2003-2005 Thesis Committee, Ramakumar Krishnamurthy, MS candidate in Electrical and Computer Engineering completed December 2004  
2004-2008 Comprehensive Exam and Dissertation Committee, Gang Li, PhD candidate Cancer Biology  
2004-2008 Comprehensive Exam and Dissertation Chair and Thesis Adviser, William Brands, PhD candidate Biomedical Engineering  
2005-2007 Comprehensive Exam and Dissertation Committee, Sun Mi Li, PhD candidate, Cancer Biology  
2004-2005 Thesis Committee, Shannon Kieran, M.S. completed 2005, Genetic Counseling  
2005-2007 Comprehensive Exam and Dissertation Committee Lida Hariri, PhD candidate Biomedical Engineering  
2005-2007 Comprehensive Exam and Dissertation Committee Dominique Jennings, PhD candidate Biomedical Engineering

## **NATIONAL AND INTERNATIONAL COMMITTEES**

GOG Cancer Prevention and Control Committee, 2000

Department of Energy (DOE) Reviewer, Gynecologic Cancer Applications, 2001

National Institutes of Health, National Cancer Institute (NIH/NCI), Reviewer for Gynecologic Cancer SPORE Applications, June 2002

Pennsylvania Department of Health, Cancer Prevention and Control Section, Technical Review Committee for Ovarian Cancer Research Applications, May, 2003

Co-Chair of United Engineering Foundation Conference, "Advances in Optics for Biotechnology, Medicine and Surgery", Banff, Canada, August 2003

Department of Defense (DOD) Reviewer, Gynecologic Cancer Research Applications, 2004-present

SBMI Medical Imaging Technologies Reviewer, NIH, 2004-present

SPORE in Ovarian and Gynecological Cancer Review Committee, NIH, May 2005

## NATIONAL AND INTERNATIONAL COMMITTEES CONTINUED:

Special Emphasis Panel (SEP) for review of applications submitted to the National Cancer Institute through the NIH extramural Loan Repayment Program 2006-2006

National Toxicity Program invited workshop attendee and invited presentation on ovarian cancer. Sponsored by NTP and NIEHS

## EDITORIAL REVIEWER FOR THE FOLLOWING JOURNALS

Cancer Research; Clinical Cancer Research; Cancer Detection and Prevention (Editorial Board, 2002); Clinique de Genolier; Gynecologic Oncology; The Female Patient; Journal of Biomedical Optics; Biotechnology; Applied Biochemistry; International Journal of Gynecological Cancer; Cancer Epidemiology, Biomarkers and Prevention, American Journal of Obstetrics and Gynecology, Obstetrics and Gynecology, Cancer, Neoplasia.

## BIBLIOGRAPHY

### *Chapters in Books:*

1. Brewer MA, Bodurka DC, Edwards CL. Chapter 28, Gynecologic Melanoma. *In: Cancer in Women.* Kavanagh, Singletary, Einhorn, DePetrillo, eds. Blackwell Science, Inc., Maiden, Maine, 1998, pp. 397-403.
2. Brewer MA, Sbach A, Sandella J. Chapter 9, Abnormal Papanicolaou Smears and Human Papilloma Virus. *In: Glass' Office Gynecology,* Fifth Edition. Curtis M & Hopkins M, eds. Lippincott, Williams and Wilkins, 1998, p. 219-234.
3. Brewer MA. Treatment of Squamous Intraepithelial Lesions: Chapter 7, Principles and Controversies, *In: ACS Atlas of Clinical Oncology, Cancer of the Female Lower Genital Tract.* Eifel P, Levenback C, eds. B.C Decker, Inc., New York, 2001, pp. 101-120.
4. Brewer MA. Prevention of Gynecology Malignancies. *In: Gynecologic Cancer: Controversies in Management.* Gershenson, McGuire, Gore, Thomas, Quinn, eds. Mosby Publishing, London, 2002.
5. Brewer MA, Gostout B. Clinical Obstetrics and Gynecology. *In: Guidelines for the Referral of the Pelvic Mass.* 2006.

### *Refereed Journal Articles:*

1. Brewer M, Gershenson DM, Herzog CE, Mitchell MF, Silva EG, and Wharton JT. Outcome and reproductive function after chemotherapy for ovarian dysgerminoma. *J Clin Oncol* 17: 2670-5, 1999.
2. Brewer MA, Mitchell MF, and Bast R. Prevention of ovarian cancer. *In Vivo* 13: 99-106, 1999.
3. Utzinger U, Brewer M, Silva E, Gershenson D, Bast RC, Mitchell M, and Richards-Kortum R. Reflectance spectroscopy for in vivo characterization of ovarian tissue. *Lasers Surg Med* 28: 56-66, 2001.
4. Brewer M, Utzinger U, Silva E, Gershenson D, Bast RC, Follen M, and Richards-Kortum R. Fluorescence spectroscopy for in vivo characterization of ovarian tissue. *Lasers Surg Med* 29: 128-35, 2001.
5. Brewer M, Utzinger U, Satterfield W, Gershenson D, Bast R, Richards-Kortum R, and Follen M. Biomarker modulation in a nonhuman Rhesus primate model for ovarian cancer chemoprevention. *Cancer Epidemiol Biomarkers Prev* 10: 889-93, 2001.

### **Refereed Journal Articles Continued:**

6. Ramirez PT, Ramondetta LM, Burke TW, Gershenson DM, and Brewer MA. Metastatic uterine papillary serous carcinoma to the pericardium. [Case Report] *Gynecol Oncol* 83: 135-7, 2001.
7. Brewer M, Baze W, Hill L, Utzinger U, Wharton JT, Follen M, Khan-Dagwood-F, and Satterfield W. Rhesus macaque model for ovarian cancer chemoprevention. *Comparative Med* 51: 424-9, 2001.
8. Brewer M, Utzinger U, Li Y, Atkinson EN, Satterfield W, Auersperg N, Richards-Kortum R, Follen M, and Bast R. Fluorescence spectroscopy as a biomarker in a cell culture and in a nonhuman Rhesus primate model for ovarian cancer chemopreventive agents. *J Biomed Optics* 7: 20-6, 2002.
9. Brewer M, Johnson K, Follen M, Gershenson D, and Bast R. Prevention of ovarian cancer: intraepithelial neoplasia. *Clin Cancer Res* 9: 20-30, 2003.
10. Zou CP, Vlastos A-T, Yang L, Wang J, Brewer M, and Follen M. Effect of 4-hydroxyphenyl retinamide on human cervical epithelial and cancer cell lines. *J Soc Gynecol Invest* 10: 41-8, 2003.
11. Ozols RF, Daly MB, Klein-Szanto A, Hamilton TC, Bast Jr RC, and Brewer MA. Specific Keynote: Chemoprevention of ovarian cancer: The journey begins. *Gynecol Oncol* 88: S59-66, 2003.
12. Berchuck A, Brewer M, Rodriguez G, and Campbell I. Discussion: Ovarian cancer prevention. *Gynecol Oncol* 88: S67-70, 2003.
13. Drezek RA, Richards-Kortum R, Brewer MA, Feld MS, Pitris C, Ferenczy A, Faupel ML, and Follen M. Optical imaging of the cervix. *Cancer* 98: 2015-27, 2003.
14. Donato ML, Aleman A, Champlin RE, Saliba RM, Wharton JT, Burke TW, Bodurka DC, Bevers MW, Levenback CF, Wolf JK, Bast RC, Freedman RS, Ippoliti C, Brewer M, Gajewski JL, and Gershenson DM. Analysis of 96 patients with advanced ovarian carcinoma treated with high-dose chemotherapy and autologous stem cell transplantation. *Bone Marrow Transplant* 33:1219-24, 2004.
15. Garcia FA, Ranger-Moore J, Barker B, Davis J, Brewer M, Lozevski J, Vinyak S, Liu Y, Yemane J, Hatch K, Alberts DS, Bartels HG, and Bartels PH. Karyometric image analysis for intraepithelial and invasive cervical lesions. *Anal Quant Cytol Histol* 26: 141-50, 2004.
16. Brewer M, Ranger-Moore J, Greene M, Alberts D, Liu Y, Bartels H, Baruch A, and Bartels P. Preneoplastic changes in ovarian tissue. *Anal Quant Cytol Histol* 26: 207-16, 2004.
17. Marret H, Sauget S, Giraudeau B, Brewer M, Ranger-Moore J, Body G, and Tranquart F. Contrast-enhanced sonography helps in discrimination of benign from malignant adnexal masses. *J Ultrasound Med* 23: 1629-1939, 2004.
18. Brewer MA, Utzinger U, Barton JK, Hoying JB, Kirkpatrick ND, Brands WR, Davis JR, Hunt K, Stevens SJ, and Gmitro AF. Imaging of the ovary. *Technology for Cancer Res Treatment* 316: 617-27, 2004.

### **Refereed Journal Articles Continued:**

19. Brewer M, Ranger-Moore J, Baruch A, Alberts D, Greene M, Thompson D, Liu Y, Davis J, and Bartels P. Exploratory study of ovarian intraepithelial neoplasia. *Cancer Epidemiol Biomarkers Prev* 14: 299-305, 2005.
20. Kirkpatrick ND, Zou C, Brewer MA, Brands WR, Drezek RA, and Utzinger U. Endogenous fluorescence spectroscopy of cell suspensions for chemopreventive drug monitoring. *Photochem Photobiol* 81: 125-34, 2005.
21. Brewer M, Wharton JT, Wang J, McWatters A, Auersperg N, Gershenson D, Bast R, and Zou CP. In vitro model of normal immortalized ovarian surface epithelial cells and ovarian cancer cells for chemoprevention of ovarian cancer. *Gynecol Oncol* 98:182-92, 2005.
22. Marret H, Brewer M, Giraudeau B, Tranquart F, Voelker K, and Satterfield W. Ovine model to evaluate ovarian vascularization using contrast enhanced sonography. *Comparative Med* 55: 150-5, 2005.
23. Srivastava S, Rodriguez J, Rouse A, Brewer M, and Gmitro A. Analysis of confocal micro-endoscope images for automatic detection of ovarian cancer. 2005 IEEE Intl. Conf. on Image Processing (presented at Genoa, Italy, Sept. 11-14, 2005). *Image Processing* 1: 1113-6, 2005.
24. Zou D, Brewer M, Garcia F, Fuegang J, Wang J, Zang R, and Zou CP. Cactus pear--a natural product in cancer chemoprevention. *J Nutr* 4:25, 2005. [Article is available from <http://www.nutritionj.com/content/4/1/25>].
25. Ranger-Moore J, Alberts DS, Montironi R, Garcia F, Davis J, Frank D, Brewer M, Mariuzzi GM, Bartels HG, and Bartels HP. Karometry in the early detection and chemoprevention of intraepithelial lesions. *Eur J Cancer* 41: 1875-88, 2005.
26. Ray JA, Loescher LJ, and Brewer M. Risk-reduction surgery decisions in high risk women seen for genetic counseling. *J Genetic Counseling* 14(6): 473-84, 2005. [published online December 29, 2005]
27. Marret H, Brewer M, Giraudeau B, Tranquart F, and Satterfield W. Assessment of cyclic changes of microvessels in ovine ovaries using Sonovue contrast-enhanced ultrasound. *Ultrasound in Med Biol* 32: 163-9, 2006.
28. Brewer M, Kirkpatrick ND, Wharton T, Wang J, Hatch H, Auersperg N, Utzinger U, Gershenson D, Bast R, and Zou C. 4-HPR modulates gene expression in ovarian cells. *Int J Cancer* 119(5): 1005-13, 2006.
29. Kanter EM, Walker RM, Marion SL, Brewer M, Hoyer PB, and Barton JK. Dual modality imaging of a novel rat model of ovarian carcinogenesis. *J Biomed Optics* 11(4): #041123, 2006.
30. Gordon MS, Matei D, Aghajanian C, Matulonis UA, Brewer M, Fleming GF, Hainsworth JD, Garcia AA, Pegram MD, Schilder RJ, Cohn DE, Roman L, Derynck MK, Ng K, Lyons B, Allison DE, Eberhard DA, Pham TQ, Dere RC, And Karlan BY. Clinical activity of pertuzumab (rhuMAb 2C4), a HER dimerization inhibitor, in advanced ovarian cancer: potential predictive relationship with tumor HER2 activation status. *J Clin Oncol* 24(26): 4324-32, 2006.



### **Refereed Journal Articles Continued:**

31. Nammalvar V, Utzinger U, Hsu K, Van den Berg Frans WJ, Bender J, Satterfield W, Brewer M, and Drezek R. Characterization of chemopreventive drug activity in a non-human cynomolgus (*Macaca fascicularis*) primate model using fluorescence spectroscopy and chemometric analysis. *J Biomed Optics* in press.
32. Gostout BS, and Brewer MA. Guidelines for referral of the patient with an adnexal mass. [Article]. *Clin Obstet Gynecol* 49(3): 448-58, 2006.
33. Brewer M, Ranger-Moore J, Satterfield W, Hao Z, Wang J, Brewer E, Wharton JT, Bast R, Zou C. Combination of 4-HPR and oral contraceptive in monkey model of chemoprevention of ovarian cancer *Front Biosci*. 2007 Jan 1;12:2260-8.
34. Kelloff GJ, Lippman SM, Dannenberg AJ, Sigman CC, Pearce HL, Reid BJ, Szabo E, Jordan VC, Spitz MR, Mills GB, Papadimitrakopoulou VA, Lotan R, Aggarwal BB, Bresalier RS, Kim J, Arun B, Lu KH, Thomas ME, Rhodes HE, Brewer MA, Follen M, Shin DM, Parnes HL, Siegfried JM, Evans AA, Blot WJ, Chow WH, Blount PL, Maley CC, Wang KK, Lam S, Lee JJ, Dubinett SM, Engstrom PF, Meyskens FL Jr, O'Shaughnessy J, Hawk ET, Levin B, Nelson WG, Hong WK; AACR Task Force on Cancer Prevention. Progress in chemoprevention drug development: the promise of molecular biomarkers for prevention of intraepithelial neoplasia and cancer--a plan to move forward. *Clin Cancer Res*. 2006 Jun 15;12(12):3661-97.

### **Abstracts:**

1. Brewer MA, Utzinger U, Gershenson D, Silva E, Bast R, Richards-Kortum R, and Mitchell MF. "Optical characterization of ovarian tissue *in vivo* with reflectance spectroscopy", SGO 30<sup>th</sup> Annual Meeting, San Francisco, California, March 25-27, 1999, Abstract #35.
2. Brewer MA, Utzinger U, Satterfield W, Gershenson DM, Bast R, Richards-Kortum R, and Follen M. "Biomarker modulation in a nonhuman rhesus primate model for ovarian cancer chemoprevention", SGO 32<sup>nd</sup> Annual Meeting, Nashville, Tennessee, March 3-7, 2001.
3. Xie S, Brewer M, Wang J, Broaddus R, Wharton T, Follen M, and Zou C. "A comparison between chemopreventive agents 4-HPR and DFMO in their effects in immortalized human cervical epithelial cells and cervical cancer cells", AACR 93<sup>rd</sup> Annual Meeting of the American Association for Cancer Research, San Francisco, California, April 6-10, 2002, Abstract #3199.
4. Brewer M, Wang J, Li Y, McWatters A, Wharton JT, Bast R, and Zou C. "Response of 4-HPR in growth inhibition and apoptosis induction of normal and immortalized human ovarian epithelial cells and ovarian carcinoma cells", AACR 93<sup>rd</sup> Annual Meeting of the American Association for Cancer Research, San Francisco, California, April 6-10, 2002, Abstract #3200.
5. Zou C, Brewer M, Wang J, Li Y, McWatters A, Wharton JT, and Bast R. "Effects of 4-HPR in normal immortalized human ovarian epithelial cells and ovarian cancer cells", 10<sup>th</sup> International Conference on Gene Therapy of Cancer, San Diego, California, December 13-15, 2002, Abstract #29.
6. Brewer MA, Zhou J, Wharton JT, Ye J, Bast R, and Zou C. "Biomarkers of 4-HPR in response of ovarian carcinoma OV-CA 433 cells", AACR 94<sup>th</sup> Annual Meeting of the American Association for Cancer Research, Toronto, Ontario, Canada, April 5-9, 2003, Abstract #107618.
7. Dibble J, Greer K, Brands W, Hoying J, and Brewer MA. "Identification of candidate genes involved in the development of ovarian cancer", AACR 2<sup>nd</sup> Annual International Conference on Frontiers in Cancer Prevention Research, Seattle Washington, October 16-19, 2003, Abstract #B33.
8. Brewer MA, Ranger-Moore J, Alberts D, Thompson D, Liu Y, Baruch A, and Bartels P. "Exploratory study of ovarian intraepithelial neoplasia", AACR 3<sup>rd</sup> Annual International Conference on Frontiers in Cancer Prevention Research, Phoenix, Arizona, October 26-30, 2003, Abstract #1563.

### **Abstracts Continued:**

9. Hao Z, Garcia F, Cheng S, Wang J, Brewer M, and Zou C. "Green tea compound induced apoptosis in cervical cancer cells", ASCB Annual Meeting, Francisco, California, December 13-17, 2003, Abstract #L390.
10. Brewer MA, Ranger-Moore J, Alberts D, Thompson D, Liu Y, Baruch A, and Bartels P. "Exploratory study of ovarian intraepithelial neoplasia", SGO 35<sup>th</sup> Annual Meeting on Women's Cancer, Focused Plenary Session, San Diego, California, February 7-11, 2004, Abstract #305.
11. Carns W, Brewer MA, Ranger-Moore J, and Hatch K. "Assessment of referral guidelines for women with pelvic masses", SGO 35<sup>th</sup> Annual Meeting on Women's Cancer, Focused Plenary Session, San Diego, CA, February 7-11, 2004, Abstract #561.
12. Brewer M, Kirkpatrick N, Wharton JT, Wang J, Zang R Bast R, Utzinger U, and Zou C. "Differential induction of gene expression by 4-HPR in immortalized normal ovarian surface epithelial cells and ovarian cancer cells". The 5th Biennial Ovarian Cancer Research Symposium: Emerging Controversies in Ovarian Cancer Research and Treatment, Seattle, Washington, September 9-10, 2004.
13. Brewer M and Zou C. "4-HPR modulate gene expression in immortalized normalized normal ovarian surface epithelial and ovarian cancer cells", Women's Cancer's Scientific Retreat, Tucson, Arizona, February 19, 2005.
14. Brewer MA, Utzinger U, Satterfield W, Gershenson DM, Bast R, Richards-Kortum R, and Follen M. "Biomarker modulation in a non-human primate model for ovarian cancer chemoprevention", SGO 36<sup>th</sup> Annual Meeting on Women's Cancer, Miami Beach, FL, March 19-23, 2005.
15. Kirkpatrick ND, Brands WR, Zou C, Brewer MA, Utzinger U. Intrinsic fluorescence biomarkers in cells treated with chemopreventive drugs. [Proc. SPIE Vol. 5699](#), p. 255-262, [Imaging, Manipulation, and Analysis of Biomolecules and Cells: Fundamentals and Applications III](#); Dan V. Nicolau, Joerg Enderlein, Robert C. Leif, Daniel L. Farkas, Ramesh Raghavachari; Eds. Publication, March 2005.
16. Brewer M, Sun C, Feugang J, Wang J, Zhang S, Zou C. "Apoptosis induced by natural products in normal and malignant ovary". ASCB 45th Annual Meeting, San Francisco, California, December 10-14, 2005, Abstract #L59.
17. Matei D, Gordon M, Aghajanian C, Matulonis U, Brewer M, Fleming G, Jhainsworth J, Garcia A, Pegram M, and Karlan B. "Clinical activity of single agent Pertuzumab (rhuMab 2C4), a HER dimerization inhibitor, in advanced ovarian cancer (OC): potential predictive relationship with tumor HER2 activation status". SGO 37<sup>th</sup> Annual Meeting on Women's Cancer, New Orleans, LA, Focused Plenary Session. March 24-28, 2006.

### **Scholarly Presentations:**

1. Invited Speaker, "A system for rapid acquisition of excitation emission matrices *in vivo*: instruments and studies". The OSA Biomedical Topical meeting, March 12, 1998.
2. Invited Presenter, "A review of the state-of-the-art and challenges in the prevention, initiation, progression and treatment of ovarian cancer". Joint Working Group on Quantitative *In Vivo* Functional Imaging in Oncology meeting, Washington D.C., January 6-8, 1999. Meeting Report, 2000, 52 pp, Session #1, p 2.
3. Invited Speaker, "Update on chemotherapeutic treatment of ovarian dysgerminoma". Annual Meeting of the American Radium Society (ARS), April 17, 1999.

### ***Scholarly Presentations Continued:***

4. Brewer M, Richards-Kortum R. "Ovarian Cancer." Conference of the Joint Working Group on Quantitative In Vivo Functional Imaging in Oncology, Sponsored by the National Cancer Institute, and the US Public Health Service's Office on Women's Health; Washington, DC, January, 1999.
5. Invited Speaker, "Prevention of ovarian cancer". Advances in Urogynecology & Pelvic Organ Prolapse for the New Millennium course. Marriott Medical Center Hotel and The University of Texas-Houston Medical School, Houston, Texas, March 3-4, 2000.
6. Invited Guest Lecturer, "Oral contraceptives and retinoids for ovarian cancer chemoprevention". Cancer Institute Seminar Series, University of Utah Health Science Center, Salt Lake City, Utah, November 2-3, 2000.
7. Invited Presenter, "New imaging modalities for ovarian cancer". Ovarian Cancer Research Fund, New York, NY, December 10, 2000.
9. Invited Speaker, "Epithelial ovarian cancer: Role of fluorescence spectroscopy". United Engineering Foundation, Banff, Canada, July 26, 2001.
10. Invited Speaker, "Cervical intraepithelial lesions". International Symposium on Predictive Oncology and Therapy, Pasteur Institute, Paris, France, February 9-12, 2002.
11. Invited Speaker, "Optical imaging of the cervix". International Conference on Cervical Cancer, Houston, Texas, April 11-14, 2002.
12. Invited Guest Lecturer, "Ovarian cancer prevention and use of retinoic acid to therapy CIN I-III", Jiansu Province Women's and Children's Hospital, Shanghai Tumor Institute, and Nanjing Medical University, Nanjing, P.R. China, June 21-25, 2002.
13. Invited Lecturer, "Ovarian cancer prevention", Beijing U-HaiDan Hospital, P.R. China, June 26, 2002.
14. Invited Speaker, "Building an ovarian cancer prevention program utilizing multiple technologies". Society of Pelvic Surgeons, Westin La Paloma, Tucson, Arizona, November 13, 2002.
15. Invited Course Director, Postgraduate Course, *In vivo* imaging in gynecologic cancers and precancers, SGO 34<sup>th</sup> Annual Meeting on Women's Cancer, New Orleans, LA, January 31, 2003.
16. Invited Guest Lecturer, three lectures, "Evaluation and management of adnexal masses", "Breast and ovarian cancer screening--Family history and genetic testing", and "Advanced ovarian cancer", Series 060 Postgraduate Courses, ACOG 2003 Annual Clinical Meeting, Ernest N. Memorial Convention Center, New Orleans, Louisiana, April 26, 2003.
17. Invited Attendee to the AACR Workshop, "Molecular Biology in Clinical Oncology", at The Given Institute, University of Colorado, Aspen, Colorado, June 27-July 4, 2003.
18. Conference Co-Chair and Participant, Advances in Optics for Biotechnology, Medicine and Surgery VIII, Engineering Conferences International, Banff Centre for Conferences, Banff, Canada, August 3-7, 2003.
19. Invited Speaker, "Latest developments in ovarian cancer research", Ovarian Cancer National Alliance's Sixth Annual Advocacy Conference, Sir Francis Drake Hotel, San Francisco, California, September 17-19, 2003.
20. Invited Guest and Presenter, Presentation of CME Program, Early Detection of Ovarian Cancer. "Discussion of how to identify, counsel, and treat women who are at increased risk of ovarian cancer". Gila Regional Medical Center, Silver City, New Mexico, October 3, 2003.
21. Invited to Co-Chair Sunrise/Sunset Session, SGO 35<sup>th</sup> Annual Meeting, San Diego, California, February 6-11, 2004.

### ***Scholarly Presentations Continued:***

22. Invited to Participate in the Candidate/Fellow Career Development Forum "Academic Medicine" at the SGO 35<sup>th</sup> Annual Meeting, San Diego, California, February 6-11, 2004.
23. Invited Presenter and Lecturer, ACOG's 52nd Annual Clinical Meeting, CME 060 Saturday Postgraduate Course, "Gynecologic Oncology for the Generalist", 3 lectures: "Evaluation and management of adnexal masses", "Breast and ovarian cancer screening-Family history and genetic testing", and "Advanced ovarian cancer", Philadelphia, Pennsylvania, May 1-5, 2004.
24. Grand Rounds, Baylor College of Medicine, "Prevention of ovarian cancer", Houston, Texas, October 2004.
25. Invited to serve as a Member of the Scientific Committee at the Third AACR International Conference on Frontiers in Cancer Prevention Research. Seattle, Washington, October 16-20, 2004.
26. Invited Guest and Participant. ASCO Multidisciplinary Cancer Management Course Presentation, Santo Domingo, the Dominican Republic, December 3-4, 2004.
27. Invited Speaker, Joel Childers Memorial Lecture Series "Ovarian cancer prevention", January 2006.
28. Invited Speaker, 37<sup>th</sup> Annual Tucson Seminar, Focus on Women's Cancers "Ovarian cancer prevention", January 2006.
29. Invited Speaker, National Toxicity Program Hormone Induced Tumor Workshop sponsored by NTP and NIEHS, "Clinical and epidemiologic perspectives on ovarian cancer", 2006.

### ***Colloquia:***

1. Ground Rounds, "New modalities for prevention and early detection of ovarian cancer". Oregon Health Science University, Department of OB/GYN, June 23, 1999.
2. Ground Rounds, "Ovarian cancer". University of Texas, Department of General Surgery, Houston, TX, August 24, 1999.
3. Grand Rounds, "Animal models in gynecologic cancers". University of Texas MD Anderson (UTMDACC) Cancer Center, Houston, TX, June 2, 2000.
4. Grand Rounds, "Prevention of ovarian cancer". Ovarian Working Group, Salt Lake City, UT, November 3, 2000.
5. Grand Rounds, "Ovarian cancer detection using new imaging technologies". OB/GYN Department, University of Arizona, Tucson, Arizona, May 23, 2001.
6. Invited Speaker, "Ovarian cancer prevention". Breast Cancer Group, Arizona Cancer Center, Tucson, Arizona, January 22, 2002.
7. Invited Speaker, "Ovarian cancer update". Arizona Cancer Center, Kiewit Auditorium, Arizona Cancer Center, Tucson, Arizona, May 8, 2002.
8. Invited Speaker, "Using new technologies for the detection of ovarian cancer". Arizona Cancer Center Advisory Board Members, Phoenix, Arizona, May 29, 2002.
9. Poster Presentation, "Epithelial ovarian cancer prevention". Arizona Cancer Center Annual Research Forum, Kiewit Auditorium, Tucson, Arizona, June 20, 2002.
10. Poster Presentation, "Endogenous fluorescence spectroscopy as a biomarker for ovarian cancer chemopreventive agents. Arizona Cancer Center Annual Research Forum, Kiewit Auditorium, Tucson, Arizona, June 20, 2002.

### ***Colloquia Continued:***

11. Presented Core Lecture, "Chemotherapeutics". Annual Ob-Gyn In-Service Core Lecture Series. Arizona Health Sciences Center, Tucson, Arizona, January 29, 2003.
12. Invited Participant, 34<sup>th</sup> Annual Tucson Seminar in Obstetrics and Gynecology, Hilton El Conquistador Resort & Country Club, Tucson, Arizona, February 24-26, 2003.
13. Invited Participant and Facilitator, Group Discussion on "Disease", Arizona Cancer Center Strategic Planning Retreat, Westin La Paloma, Tucson, Arizona, March 1, 2003.
14. Invited Lecturer, "Endometrial Cancer". Annual Ob-Gyn In-Service Core Lecture Series. Arizona Health Sciences Center, Tucson, Arizona, March 26, 2003.
15. Invited Presenter, "Gynecologic Cancers in Midlife". 7<sup>th</sup> Annual Menopause Conference, University Medical Center, DuVal Auditorium, Tucson, Arizona, March 29, 2003.
16. Invited Speaker, Phoenix Friends of the Arizona Cancer Center, Phoenix, Arizona, April 1, 2003.
17. Invited Presenter, "Ovarian cancer research update", a Recognition Lunch in appreciation of Dr. Brewer's many hours of service and commitment to the Arizona Cancer Center, Arizona Cancer Center Kiewit Auditorium, Tucson, Arizona, November 21, 2003.
18. Invited Speaker, "Optical imaging of ovarian cancer", Translational Research Seminar, College of Medicine, University of Arizona, January 13, 2004.
19. Invited Participant and Host, Public Symposium on Ovarian Cancer, supported by Amgen and Ortho-Biotech, Arizona Cancer Center Kiewit Auditorium, Tucson, Arizona, April 9, 2005.
20. Grand Rounds, Albany Medical College, Ovarian Cancer Prevention, April 2006.
21. Unicorn Perinatal Lecture, Middlesex Memorial Hospital, Middletown CT, Ovarian Cancer Prevention, December 6, 2006.
22. Unicorn Perinatal Lecture, Charlotte Hungerford Hospital, Torrington CT, Ovarian Cancer Prevention, December 6, 2006.
23. Unicorn Perinatal Lecture, Rockville General Hospital, Rockville CT, Ovarian Cancer Prevention, December 7, 2006.
24. Unicorn Perinatal Lecture, Day Kimball Hospital, Putnam CT, Ovarian Cancer Prevention, December 14, 2006.
25. Unicorn Perinatal Lecture, Windham Hospital, Willamantic CT, Ovarian Cancer Prevention, December 14, 2006.
26. Unicorn Perinatal Lecture, Bristol Hospital, Bristol CT, Ovarian Cancer Prevention, December 18, 2006.
27. Unicorn Perinatal Lecture, Sharon Hospital, Sharon CT, Ovarian Cancer Prevention, December 19, 2006.
28. Unicorn Perinatal Lecture, St. Mary's Hospital, Waterbury CT, Ovarian Cancer Prevention, December 21, 2006.
29. Unicorn Perinatal Lecture, William Backus Hospital, Norwich CT, Ovarian Cancer Prevention, December 28, 2006.
30. Grand Rounds, Bridgeport Hospital, Bridgeport CT, Ovarian Cancer Prevention, January 11, 2007.
31. Invited Speaker, Electrical and Computer Engineering Lecture Series, University of Connecticut, Storrs CT, January 26, 2007

### **Community Presentations:**

1. Invited Speaker, "Ovarian cancer update". Pathways to Awareness 2001, Arizona Cancer Center, Tucson, Arizona, October 20, 2001.
2. Invited Speaker, "Management of the abnormal pap". the Pima County Health Department, Well Woman Health Clinic, St. Elizabeth of Hungary, Tucson, Arizona, November 16, 2001.
3. Invited Speaker, "Ovarian cancer update". Carondelet, St. Joseph's Hospital and Carondelet St. Mary's Hospital, Tucson, Arizona, March 12-13, 2002.
4. Invited Speaker, "An education on the latest advances of ovarian cancer". Women's Network, IBM, Tucson, Arizona, September 11, 2002.
5. Invited Speaker, "Feminine aging and gynecologic cancers". University Medical Center Friends, Skyline Country Club, Tucson, Arizona, September 26, 2002.

### **GRANTS AND CONTRACTS**

#### ONGOING RESEARCH SUPPORT

DAMD17-99-1-9505 DOD/ORCP, Project 2 (PI) 11/01/02 - 10/31/06  
Subcontract MD Anderson \$220,000 20%  
*Chemoprevention of Ovarian Cancer: Modulation of Biomarkers in Women at Low Risk for Ovarian Cancer using Fenretinide.*

The aim of this study is to investigate the effect of the synthetic retinoid Fenretinide (4HPR) on the ovary of low risk women who are undergoing oophorectomy for a benign indication. To detect differences related to metabolic status of tissue as an indicator of apoptotic rate which may serve as an intermediate end-point biomarker for 4HPR using fluorescence spectroscopy, to assess the efficacy of six weeks administration of 4HPR to induce apoptosis in ovarian epithelial and stromal cells of women at low risk for ovarian cancer, and to compare the effect of 4HPR on apoptosis and modulation of proposed markers in women at low risk for ovarian cancer and to assess the feasibility of future chemoprevention trials for ovarian cancer.

U 19, Baylor Study, NIH CA98-01, Project 2 (PI) 10/01/99 - 09/30/06  
\$65,000/yr 15%

*Modulation of Biomarkers and Spectral Properties using Fluorescence Spectroscopy and Contrast Enhanced Ultrasound in High-risk Women using Fenretinide (4-HPR)*

This is a multicenter randomized study to investigate the effect of the synthetic retinoid Fenretinide (4-HPR) and enhanced ultrasound using Optison on the ovary of high risk women who have undergone prophylactic oophorectomy or oophorectomy for a benign indication.

NIH R01 CA098341-01A1, Biomedical Engineering Research Grant NIH (Co-Investigator) 08/01/03 - 07/30/07  
\$250,000/yr 10%  
*Optical Spectroscopy of Ovarian Cancer*

The major goals of this project will be to measure fluorescence and reflectance spectra from the ovary, biopsy the measurement site, and study living tissue slices of these biopsies with microscopy techniques. Sophisticated computational models will be developed to link spectroscopic data with fluorophore distribution maps and optical properties of the ovary.

PI: Urs Utzinger, PhD

R01 National Cancer Institute (Co-Investigator) 07/01/05 - 06/30/08  
Diagnosis of Ovarian Cancer by Confocal Microendoscopy \$250,000/yr 10%

The major goal of this study is to develop the confocal microendoscope for clinical application.

PI: Art Gmitro, PhD

## GRANTS AND CONTRACTS CONTINUED

R01 National Cancer Institute (Co-Investigator)  
Optical imaging of ovarian carcinogenesis 10/01/05 - 09/30/10  
In a rat menopause model \$250,000/yr 5%

The major goal of this study is to develop the optical coherence tomography/microscopy in a rat menopause model.

UTMDACC Cattlemen for Cancer Research 2004-2006 2%  
*Technology Development for Ovarian Cancer Screening* \$32,500/yr

The major goal of this study is that to address the problem of adequate access to the ovary, we are developing a less invasive way to access the ovary using ultrasound guidance through the vaginal wall over the surface of the ovary, using a sheep animal model.

R01 CA119200-01A1 (Brewer, Co-PI) 12/01/2006-  
11/30/10  
Optical Imaging of Ovarian Carcinogenesis in a Rat Menopause Model

### PENDING SUPPORT

R21/33 (Brewer PI)  
Image Guided Laser Therapy of Metastatic Ovarian Cancer 7/01/06-06/30/10

AICR (Brewer Co-PI) 9/01/06-08/31/08  
Prickly pear cactus -- A natural product with anti-cancer activity  
PI Changping Zou

NIH-Quick Trial PAR-04-155 (Brewer, Co-Investigator) 12/01/06-11/30/08  
Development of natural product in ovarian cancer prevention and treatment  
PI Changping Zou

NIH R21 Zou Co Investigator, PI Quing Zhu, PhD, Brewer CoPI 7/1/07-6/30/10  
Hybrid scintigraphy/OCT intraoperative probe for ovarian cancer detection

**PAST RESEARCH SUPPORT** (last 3 years)

Better Than Ever Ovarian Cancer Research Grant (PI) 06/01/03-05/31/04  
Arizona Cancer Center  
*Nuclear karyometry of the ovary*  
The objective of this project is to find signatures in normal tissue that will describe people at higher risk of developing ovarian cancer.

Better Than Ever Ovarian Cancer Research Grant (Loescher, PI) 06/01/03-05/31/04  
Arizona Cancer Center  
*Surveillance and prevention practices of women evaluated for hereditary breast and ovarian cancer*  
This is a pilot project of a sub-study of the Arizona Cancer Center's Hereditary Cancer Risk Database project which collects data on families at high genetic risk for cancer.  
(Brewer, Co-PI)

Better Than Ever Ovarian Cancer Research Grant (Utzingler, PI) 06/01/03-05/31/04  
Arizona Cancer Center  
*Optical spectroscopy of ovarian cancer*  
The goal of this project is to develop a better method of early detection of ovarian cancer as well as to define a premalignant lesion with optical spectroscopy.  
(Brewer, Co-PI)

ADCRC RFP 1-700 7-095 (PI) 07/01/02-06/30/05  
Arizona Disease Control Research Commission  
*Fluorescence Spectroscopy as a Biomarker for Prevention and Early Diagnosis of Ovarian Cancer*  
The goal of this project is to develop optical methods to examine the ovary and provide a more accurate diagnosis for early detection of ovarian cancer.

University Physicians/University Medical Center (PI) 07/01/03-06/30/05  
Research for Clinical Care (UPERCC) Program  
*Early Diagnosis of Ovarian Neoplasia*  
This project is designed to study the use of new optical technology and how it correlates with histological evaluation of ovarian tissue. The goal of this proposal is to vastly enhance technologies that can improve and automate diagnosis in women's health.