

1999 - Urology Service Chief, Department of Surgery,
Wishard Memorial Hospital, Indianapolis, IN

Licenses and Certifications:

July 1, 1991 National Board of Medical Examiners
1991-Present New York State Medical License
1997-Present Virginia State Medical License
1999-Present Indiana State Medical License

Awards and Grants:

1982 Reagents Scholarship-New York Board of Reagents
1982-1986 Board of Trustees Honor Scholarship-George Washington University
1995 Andlinger Fellowship Award-The American Austrian Foundation
1996-1998 American Foundation of Urologic Disease Research Scholar Award
1996-1998 NIH-Funded Training Program Cell and Molecular Biology of the
Urogenital System 5-T32-DK07642 7/1/96 - 6/30/98 32,300/yr
1996-1997 CaPCURE Research Award-Co-Investigator (PI-Chung, LWK)
1996-1997 ACS-Institutional Research Grant-Co-Investigator (PI-Kao, C)
1997-1998 CaPCURE Research Award (PI-Gardner, TA \$100,000)
1997-1998 CaPCURE Research Award-Co-Investigator (PI-Chung LWK)
1998 AUA Essay Contest Co-First Prize in Research Category
1998-1999 CaPCURE Research Award (PI-Gardner, TA \$100,000)
1998-2000 DOD DAMD17-98-1-8643 Co-Investigator (10%)(PI-Kao, C)

Editorial Board Memberships / Scientific Advisory Board

1998 – Editor - Gene Therapy and Molecular Biology
1999 – Editor - Tumor Targeting
1997 – Reviewer - Journal of Urology
1999 - DirectGene, Inc. - Senior Scientist and Founder
1999 - DirectGene, Inc. - Director of Clinical Research

Publications

Original Articles

1. Matthews GJ, **Gardner TA**, Eid JF: *In vitro* fertilization with intracytoplasmic sperm injection(ICSI) improves pregnancy rates for electroejaculated sperm. J. Urol. 155:1934-1937, 1996.
2. **Gardner TA**, Boyd S, Theodorescu D. Factors predicting hospital length of stay in patients treated by radical prostatectomy. Surg. Forum 48: 597-600, 1997.
3. Cheon J, Ko S-C, **Gardner TA**, Shirakawa T, Kao C, Chung LWK. Osteosarcoma: Osteocalcin promoter based suicide gene therapy in combination with methotrexate in a murine osteosarcoma model. Cancer Gene Therapy 4(5): 359-365, 1997.
4. Gotoh A, Ko SC, Shirakawa T, Cheon J, Kao C, Miyamoto T, **Gardner TA**, Ho LJ, Cleutjens C, Trapman J, Graham FL, Chung LWK. Development of prostate-specific antigen promoter-based gene therapy for androgen-independent human prostate cancer. J Urol 160: 220-229, 1998.

5. **Gardner TA**, Lemer ML, Schlegel PN, Waldbaum RS, Vaughan ED Jr., Steckel J. Microfocal prostate cancer: Biopsy cancer volume does not predict actual tumor volume. *Brit J Urol* 81(6):839-43, 1998.
6. **Gardner TA**, Ostad M, Mininberg DT. Diagnostic flexible peritoneoscopy: Assessment of the contralateral internal ring during unilateral herniorrhaphy. *J Pediatr Surg* 33(10): 1486-9,1998.
7. Shirakawa T, Ko SC, **Gardner TA**, Cheon J, Miyamoto T, Gotoh A, Chung LWK, Kao C. *In vivo* suppression of osteosarcoma pulmonary metastasis with intravenous osteocalcin promoter-based toxic gene therapy. *Cancer Gene Therapy* 5(5): 274-280, 1998.
8. Pavlovich CP, Gmyrek GA, **Gardner TA**, Poppas DP, Mininberg DT. Flexible transinguinal laparoscopy to assess the contralateral ring in pediatric inguinal hernias. *Tech Urol* 4(3): 141-4,1998.
9. Rhee HW, Chang SM, Zhou HE, Pathak S, Multani AS, Visakorpi T, **Gardner TA**, Chung LW K. Permanent phenotypic and genomic changes of a human prostate cancer cell line LNCaP through cellular interaction with prostate or bone fibroblasts in vivo or under microgravity-simulated growth conditions. *Cancer Detection and Prevention*, (In Press): 1999.
10. Shirakawa T, **Gardner TA***, Ko SC, Bander N, Woo Savio, Gotoh A, Kamidono S, Chung LWK, Kao C. Cytotoxicity of Adenoviral-Mediated Cytosine Deaminase Plus 5-Fluorocytosine Gene Therapy is Superior to Thymidine Kinase Plus Acyclovir in a Human Renal Cell Carcinoma Model. *J Urol* (In Press), 1999. (*Corresponding Authorship)
11. **Gardner TA**, Kao C, Ko SC, Cheon J, Wu TT, Cui Q, Balian G, Chung LWK. Prostate cancer cell killing using a genetically modified bone stroma cell: Cellular espionage explains the bystander effect. *Cancer Research* (In preparation).
12. **Gardner TA**, Kao C, Ko SC, Cheon J, Chung LWK. Tumor-restricted osteocalcin based gene therapy for metastatic prostate cancer the safety of intraosseous delivery. *Hum Gene Therapy* (In preparation)
13. **Gardner TA**, Lui D, Ko SC, Shirakawa T, Cheon J, Kao C, Burt M. Locoregional gene therapy: Single lung perfusion for the treatment of pulmonary metastasis from osteosarcoma. *Cancer Gene Therapy* (In preparation).
14. Ko SC, Shirakawa T, Cheon J, **Gardner TA**, Ou YC, Aprikan AG, Zhou HE, Kao C, Chung LWK. Osteocalcin promoter-mediated toxic gene therapy for prostate cancer: A unique approach for prostate cancer osseous metastasis. *Nature Medicine* (Submitted)
15. **Gardner TA**, Whitmore WF Jr., Fair WR, Herr HW, Bains MS, Russo P, Morse M, Sheinfeld J, Sogani PC, Sarkis A, Burt M. Renal cell carcinoma with inferior vena caval involvement: A Memorial Sloan-Kettering Cancer Center experience. *J Clin Oncol* (In preparation)
16. **Gardner TA**, Boyd S, Theodorescu D. Factors determining length of stay after radical prostatectomy: A comparison of perineal and retropubic approach. *JAMA* (In preparation)
17. **Gardner TA**, Li PS, Lopez M, Wright EJ, Goldstein M. Microsurgical vasoepididymostomy: A comparison of end-to-end, end-to-side, and tubular pull-through techniques in the rat. *J Urol* (In preparation).

Chapters and Reviews

1. **Gardner TA**, Poppas DP, Wei JT, Blavias JG: Volvulus of the ileal conduit: A late complication. *J. Urol.* 152:948-950, 1994.
2. Ngadiman S, Hoda SA, Campbell WG Jr, **Gardner TA**, May M: Concurrent malakoplakia and primary squamous cell carcinoma arising in long standing chronic cystitis. *Brit. J. Urol.* 74:801-802, 1994.
3. Young GPH, Li PS, **Gardner TA**, Goldstein M: Animal models for microsurgical training and research, Chapter 33, In *Surgery of Male Infertility*, Marc Goldstein (ed.), 1994.
4. Goldstein M, Li PS, **Gardner TA**: Urologic microsurgery: Training and research, Course Manual, The AUA surgical learning center meeting, Microsurgery, Houston, Texas, 1994.

5. **Gardner TA**, Theodorescu D. Diagnosis and treatment of prostate cancer. *Surg. Sci. Management* 3(12): 20-28, 1997
6. **Gardner TA**, Ko SC, Kao C, Shirakawa T, Cheon J, Gotoh A, Wu TT, Sikes RA, Zhou HE, Cui Q, Balian G, Chung LWK. Exploiting stromal-epithelial interaction for model development and new strategies of gene therapy for prostate cancer and osteosarcoma metastases. *Gene Therapy and Molecular Biology* 2:41-58, 1998.

Invited Presentations

1. **Gardner TA**, Li PS, Lopez M, Wright EJ, Goldstein M. Microsurgical vasoepididymostomy: Which technique is best? The Department of Urology Grand Rounds, General Hospital, Salzburg, Austria, February 1995.
2. **Gardner TA**, Kaneda Y, Liu D, Ko SC, Ginsberg RJ, Burt M, Kao C, Chung LWK. Gene therapy for the treatment of sarcoma. Thoracic Service Grand Rounds-Department of Surgery-Memorial Sloan-Kettering Cancer Center, New York, NY, March 1998.
3. **Gardner TA**, Ko SC, Kao C, Shirakawa T, Cheon J, Gotoh A, Wu TT, Sikes RA, Zhou HE, Cui Q, Balian G, Chung LWK. Exploiting stromal-epithelial interaction for model development and new strategies of gene therapy for prostate cancer and osteosarcoma metastases. International Conference on Gene Therapy, Crete, Greece, August 1998.
4. **Gardner TA**, Ko SC, Kao C, Cheon J, Shirakawa T, Chung LWK. Tumor-restricted adenoviral gene therapy applied to osteosarcoma and prostate cancer. Cold Spring Harbor Laboratory's Meeting on Vector targeting strategies for therapeutic gene delivery, March 1999.
5. **Gardner TA**, Ko SC, Kao C, Chung LWK. Ad-OC-TK gene therapy for the treatment of metastatic osteosarcoma. Pediatric Oncology Service Grand Rounds-Department of Medicine-Memorial Sloan-Kettering Cancer Center, New York, NY, June 1999.
6. **Gardner TA**. Gene therapy for the treatment of urologic malignancies. Clinical Science Symposia at the 32nd Annual Meeting of American Society of Nephrology, Miami, FL, November 1999.

Community Support Group Presentations

1. US TOO Charlottesville Chapter, Charlottesville, VA 4/97
2. Man-to-Man (ACS-Sponsored) Lynchburg Chapter, Lynchburg, VA 10/97
3. US TOO of the Valley, Waynesboro, VA 2/98
4. US TOO Richmond Chapter, Richmond, VA 3/98
5. US TOO Charlottesville Chapter, Charlottesville, VA 4/98
6. Man-to-Man (ACS-Sponsored), Roanoke, VA 4/98
7. US TOO Annual Regional Directors Meeting, Chicago, IL 10/98
8. US TOO of the Valley, Waynesboro, VA 2/99
9. US TOO Charlottesville Chapter, Charlottesville, VA 4/99
10. Man-to-Man (ACS-Sponsored) Lynchburg Chapter, Lynchburg, VA 4/99
11. US TOO Richmond Chapter, Richmond, VA 6/99
12. Man-to-Man Indianapolis Chapter, Indianapolis, IN, 9/99

Investigational New Drug/RAC Applications

- BB-IND 8115 - Adenovirus Vector (Ad-OC-TK, BioReliance) Expressing Thymidine Kinase Gene Under Regulation of an Osteocalcin Promoter and Valacyclovir
- RAC #9812-276 - Phase I Study of Ad-OC-TK Plus Valacyclovir for the Treatment of Metastatic recurrent prostate cancer

Patent Pending

1. Production of adenoviral vectors using serum-free suspension cell culture in a hollow fiber system
2. MN - promoter based gene therapy for the treatment of malignancies.
3. β -HCH promoter based gene therapy for testicular malignancies.

Abstracts

1. **Gardner TA.** Vascular extension of renal cell carcinoma into the inferior vena cava: An institutional experience. Presented at the Ferdinand C. Valentine Essay Contest, New York Section of the American Urologic Association, New York, NY, March 1993.
2. **Gardner TA, Fair WR, Sogani PC, Bains MS, Herr HW, Morse M, Russo P, Sarkis A, Sheinfeld J, Whitmore WF Jr., Burt M.** Renal cell carcinoma with inferior vena caval involvement: A Memorial Sloan-Kettering Cancer Center experience. Presented at the 89th annual meeting of the American Urologic Association, San Francisco, CA, May 1994. J Urol 151:262A (Abstract #138).
3. **Gardner TA, Li PS, Lopez M, Wright EJ, Goldstein M.** Development of a rat model for microsurgical vasoepididymostomy: Effect of vasectomy technique and occlusion time on epididymal dilation. Presented at the 50th annual meeting of the American Fertility Society, San Antonio, TX, November 1994 (Abstract P-244, pS201).
4. **Gardner TA, Li PS, Lopez M, Wright EJ, Goldstein M.** Microsurgical vasoepididymostomy: A comparison of end to end, end to side, and tubular pull through techniques in the rat. Presented at the 50th annual meeting of the American Fertility Society, San Antonio, TX, November 1994 (Abstract P-254, pS205).
5. **Gardner TA.** Flexible peritoneoscopy for the diagnosis of the contralateral hernia at the time of unilateral pediatric herniorrhaphy. Presented at the Ferdinand C. Valentine Essay Contest, New York Section of the American Urologic Association, New York, NY, March 1995.
6. **Gardner TA, Li PS, Eid JF, Goldstein M.** Rectal probe electroejaculation for obtaining semen in rats. Presented at the 90th annual meeting of the American Urologic Association, Las Vegas, Nevada, April 1995. J Urol 153:499A, (Abstract #1080).
7. **Gardner TA, Hajdu S, Waldbaum R, Badillo F, Steckel J.** Can cancer volume on prostate needle biopsies accurately predict the pathological stage of radical prostatectomy specimens? Presented at 93rd Annual meeting of the New York Section of the American Urologic Association, Istanbul, Turkey, October 1995.
8. **Gardner TA, Mininberg DT.** Update on flexible peritoneoscopy for the diagnosis of the contralateral hernia at the time of unilateral pediatric herniorrhaphy. Presented at 93rd Annual meeting of the New York Section of the American Urologic Association, Istanbul, Turkey, October 1995.
9. **Gardner TA, Lemer ML, Schlegel PN, Waldbaum RS, Steckel J, Vaughan ED.** Does microfocal prostate cancer on needle biopsy predict pathologic stage or clinical course? Presented at the Sixth International Prostate Cancer Update. Beaver Creek, Colorado, February 1996.
10. **Matthews GJ, Gardner TA, Eid JF.** In vitro fertilization with intracytoplasmic sperm injection (ICSI) improves pregnancy rates for electroejaculated sperm. Presented at the 91st annual meeting of the American Urologic Association, Orlando, Florida, May 1996. J Urol 155:368A, (Abstract #230).
11. **Kao C, Ko SC, Cheon J, Gardner TA, Gotoh A, Shirakawa T, Sikes RA, Karsenty G, Chung LWK.** Osteocalcin promoter-based toxic gene therapy for the treatment of osteosarcoma and prostate cancer in experimental models. Presented at the 7th Prouts Neck Meeting on Prostate Cancer: NCI-sponsored Conference on the Biology and Treatment of Prostate Cancer. Prouts Neck, ME, October 1996.

12. **Gardner TA**, Thornhill KE, Goldstein M. Preoperative prediction of testicular biopsy: Pitting the infertility specialist against the neural network. Presented at the 52nd annual meeting of the American Society for Reproductive Medicine, Boston, MA, November 1996. (Abstract O-98, pS50).
13. **Gardner TA**, Boyd S, Theodorescu D. Factors determining length of stay after radical prostatectomy: A comparison of perineal and retropubic approach. Presented at the American Cancer Society Annual Regional Meeting of Virginia, Richmond, VA, March 1997.
14. Cheon J, Ko S-C, **Gardner TA**, Shirakawa T, Kao C and Chung LWK. Chemogene therapy: Osteocalcin promoter based suicide gene therapy in combination with methotrexate in a murine osteosarcoma model. Presented at the American Cancer Society Annual Regional Meeting of Virginia, Richmond, VA, March 1997.
15. **Gardner TA**, Lemer ML, Schlegel PN, Waldbaum R, Vaughan ED Jr., Steckel J. Microfocal prostate cancer: Biopsy volume does not predict actual tumor volume. Presented at the 92nd annual meeting of the American Urologic Association, New Orleans, LA, April 1997. J Urol 157:295 (Abstract #1148).
16. **Gardner TA**, Kao C, Ko SC, Cheon J, Wu TT, Cui Q, Balian G, Chung LWK. Prostate cancer cell killing using a genetically modified bone stroma cell: Transforming friend to foe with gene therapy. Presented at the 92nd annual meeting of the American Urologic Association, New Orleans, LA, April 1997. J Urol 157:268 (Abstract #1041).
17. Cheon J, Ko SC, **Gardner TA**, Kao C, Shirakawa T, Chung LWK. Vitamin D3-enhanced osteocalcin promoter-based gene therapy: A novel approach for the treatment of prostate cancer and its metastasis. Presented at the 92nd annual meeting of the American Urologic Association, New Orleans, LA, April 1997. J Urol 157:223 (Abstract #870).
18. Shirakawa T, Cheon J, Ko SC, **Gardner TA**, Gotoh A, Kao C, Wu TT, Chung LWK. Development of therapeutic toxic gene therapy in experimental models of human prostate cancer bone metastasis: Osteocalcin promoter-based toxic gene therapy. Presented at the 92nd annual meeting of the American Urologic Association, New Orleans, LA, April 1997. J Urol 157:22 (Abstract #86).
19. **Gardner TA**, Boyd S, Theodorescu D. Factors determining length of stay after radical prostatectomy: A comparison of perineal and retropubic approach. Presented at the 83rd annual clinical congress of the American College of Surgeons, Chicago, IL, October 1997.
20. Kao C, Ko SC, Shirakawa T, **Gardner TA**, Ou YC, Cheon J, Zhou HE, Chung LWK. Tissue specific toxic gene therapy for androgen-independent human prostate cancers. Presented at the Keystone Symposia on Molecular and Cellular Biology of Gene Therapy, Keystone, CO, January 1998.
21. Sokoloff MH, **Gardner TA**, Caven TH, Wood A, Chung LWK. Induction of human prostate cancer differentiation by Vitamin-D analogues is attenuated by bone stromal and extracellular matrix cells. Presented at the 1998 International Symposium on Biology of Prostate Growth, NIH, Bethesda, MD, March 1998 (Proceedings p101).
22. Shirakawa T, Kao C, Ko SC, **Gardner TA**, Cheon J, Miyamoto T, Gotoh A, Kamidono S, Chung LWK. Intravenous osteocalcin promoter based toxic gene therapy for the suppression of osteosarcoma pulmonary metastasis. Presented at the 89th annual meeting of the American Association for Cancer Research, New Orleans, LA, March 1998. Proceedings of the AACR 39:512 (Abstract #3487).
23. **Gardner TA**, Kao C, Shirakawa T, Ko SC, Woo S, Dasarathy Y, Eriksson K, Chung LWK. Adenoviral bystander gene therapy: Cytosine deaminase with 5-fluorocytosine is superior over thymidine kinase with acyclovir in the treatment of human renal cell carcinoma in a mouse model. Presented at the 1st annual meeting of the American Society of Gene Therapy, Seattle WA, May 1998 (Abstract #429).

24. Kao C, Kaneda Y, Liu D, Ko SC, Burt M, Ginsberg RJ, Chung LWK, **Gardner TA**. Locoregional delivery of Ad-CMV-TK combined with ganciclovir is an effective therapy for the treatment of sarcoma pulmonary metastases. Presented at the 1st annual meeting of the American Society of Gene Therapy, Seattle, WA, May 1998 (Abstract #427).
25. **Gardner TA**, Ko SC, Kao C, Kim SJ, Ou YC, Cui Q, Balian G, Chung LWK. Application of osteoblastic tissue-specific promoter and bone homing mechanism to deliver therapeutic toxic genes for the treatment of prostate cancer metastasis. Presented at the 1st annual meeting of the American Society of Gene Therapy, Seattle, WA, May 1998 (Abstract #432).
26. Ko SC, **Gardner TA**, Shirakawa T, Cheon J, Miyamoto T, Gotoh A, Chung LWK, Kao C. Effective systemic delivery of adenoviral vectors: targeting pulmonary metastases safely with a tumor-specific promoter. Presented at the 1st annual meeting of the American Society of Gene Therapy, Seattle, WA, May 1998 (Abstract #426).
27. Ko SC, Alden TD, Kim SJ, Sheehan JP, Hankins GR, **Gardner TA**, Know A, Kao C, Kallmes DF, Cloft HJ, Helm GA. The treatment of malignant meningiomas using osteocalcin promoter based gene therapy. Presented at the 1st annual meeting of the American Society of Gene Therapy, Seattle WA, May 1998 (Abstract #417).
28. **Gardner TA**, Ko SC, Kao C, Cui Q, Balian G, Chung LWK. Exploiting prostate cancer-bone stromal interaction with gene therapy: Application of osteoblastic tissue-specific promoter and bone homing mechanism to deliver therapeutic toxic genes for the treatment of prostate cancer metastasis. Presented at the 93rd annual meeting of the American Urologic Association, San Diego, CA, June 1998. J Urol 159:4 (Abstract #16). **1998 AUA Essay Contest Co-First Prize in Research Category.**
29. Sokoloff MH, **Gardner TA**, Boyd JC, Theodorescu D. Surgical approach and pain management affect length of stay in radical prostatectomy patients. Presented at the 93rd annual meeting of the American Urologic Association, San Diego, CA, June 1998. J Urol 159:301 (Abstract #1161).
30. Shirakawa T, **Gardner TA**, Kao C, Ko SC, Miyamoto T, Bander NH, Woo S, Chung LWK. Ablative gene therapy of human renal cell carcinoma: Cytosine deaminase plus 5-fluorocytosine has superior bystander effect over thymidine kinase plus acyclovir. Presented at the 93rd annual meeting of the American Urologic Association, San Diego, CA, June 1998. J Urol 159:147 (Abstract #558).
31. Ou YC, **Gardner TA**, Ko SC, Zhau HE, Kao C, Yeung F, Aprikan AG, Chung LWK. Expression of osteocalcin by primary and metastatic prostate cancer and human prostate cell lines: A novel therapeutic target for prostate cancer metastasis. Presented at the 93rd annual meeting of the American Urologic Association, San Diego, CA, June 1998. J Urol 159:2 (Abstract #6).
32. Rhee HW, Chang S, **Gardner TA**, Chung LWK. Three-dimensional human prostate organoid culture to study cell-cell and cell-matrix interaction: Irreversible alterations of prostate epithelial tumorigenicity, growth responsiveness to androgen and estrogen, and growth factors in culture. Presented at the 93rd annual meeting of the American Urologic Association, San Diego, CA, June 1998. J Urol 159:5 (Abstract #17).
33. Cheon J, Kim JJ, Koh SK, Ko SC, **Gardner TA**, Kao C, Chung LWK. Adenovirus-mediated suicide gene therapy for the treatment of orthotopic murine bladder tumors. Presented at the 93rd annual meeting of the American Urologic Association, San Diego, CA, June 1998. J Urol 159:284 (Abstract #1093).
34. **Gardner TA**, Cui Q, Kao C, Ko S-C, Cheon J, Wu TT, Chung LWK, Balian G. Pluripotential cells form bone marrow stroma deliver therapeutic genes to bone metastases. Presented at the 45th annual meeting of the Orthopaedic Research Society, Anaheim, CA, February 1999.

35. Cheon J, Kim HK, Shim GS, Kim YS, Koh SK, Ko SC, **Gardner TA**, Kao C, Chung LWK. Development of novel medical prostatectomy for the treatment of benign prostatic hyperplasia: Change of Histopathological tumor markers and effect on prostrate volume. Korea Urological Association, 1998, Seoul Korea.
36. Wada Y, **Gardner TA**, Ko SC, Kao C, Kim SJ, Shirakawa T, Chung LWK. Widening the therapeutic window of thymidine kinase/GCV gene therapy with a tumor-restricted promoter: Osteocalcin based TK gene therapy for osteosarcoma. Minisymposium presentation at the 90th annual meeting of the AACR, Philadelphia, PA, April 1999. Proceedings of the AACR 40:87 (Abstract #579).
37. Cheon J, Kim HK, Shim GS, Koh SK, Ko SC, **Gardner TA**, Zhou HE, Kao C, Chung LWK. Ablation of murine prostate utilizing ad-oc-tk/gcv treatment: a potential molecular therapy for the treatment of benign prostatic hyperplasia. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:305 (Abstract #1174).
38. Cheon J, Moon DG, Kim JJ, Kim HK, Koh SK, Ko SC, **Gardner TA**, Kao C, Chung LWK, Woo SL. Effect of adenovirus-mediated suicide gene therapy on long-term host survival in an orthotopic murine bladder tumor model. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:115 (Abstract #435).
39. Shirakawa T, Gotoh A, Fujisawa M, Okada H, Arakawa S, Kamidono S, **Gardner TA**, Wada Y, Kao C. Development of human chorionic gonadotropin subunit β (β -hcg) promoter-based toxic gene therapy for testicular germ cell tumor. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:183 (Abstract #706).
40. Shirakawa T, Matsubara S, Gotoh A, Fujisawa M, Okada H, Arakawa S, Kamidono S, **Gardner TA**, Wada Y, Ko SC, Kao C. Molecular therapy with recombinant wt-p53 adenovirus for the treatment of benign prostatic hyperplasia in human cells and rat experimental models. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:359 (Abstract #1391).
41. Ou YC, Yeung F, Yang L, Kao C, Chung LWK, **Gardner TA**. MN promoter activity in renal cell carcinoma cell lines: a potential for tissue restrictive gene therapy. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:145 (Abstract #554).
42. Kim SJ, **Gardner TA**, Ko SC, Kao C, Balian G, Chung LWK. Enhancement of bystander prostate cancer cell killing by the utilization of genetically engineered bone stromal cells that confer either cytosine deaminase or thymidine kinase gene. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:58 (Abstract #217).
43. Ou YC, **Gardner TA**, Ko SC, Zhou HE, Kao C, Chung LWK, Water D. Expression of osteocalcin in canine metastatic prostate cancer : an ideal prostate cancer animal model for osteocalcin promoter-based toxic gene therapy. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:130 (Abstract #498).
44. Caven TH, Sokoloff MH, Chang SM, **Gardner TA**, Wood A, Chung LWK. Inhibition of human prostate cancer growth by vitamin-D analogues is attenuated by increases in stromal and extracellular matrix factors. Accepted for presentation at the 94th annual meeting of the American Urologic Association, Dallas, TX, May 1999. J Urol 161:296 (Abstract #1136).
45. Eriksson K, **Gardner TA**, Dasarathy Y. Purification of adenoviral vectors using anion exchange chromatography. Accepted for presentation at the 19th International Symposium on the Separation of Proteins, Peptides and Polynucleotides, Delray Beach, FL, October-November 1999.
46. Ou, T-c, Yeung F, Kao C, Chung LWK, **Gardner TA**. Expression of MN in renal cell carcinoma cell lines: A potential for tissue restrictive gene therapy. Accepted for presentation at the First International Kidney Cancer Symposium, Chicago, IL, October 1999.

47. **Gardner TA**, Wada Y, Shirakawa T, Ko S-C, Kao C, Kim SJ, Yang L, Chung LWK. Osteocalcin promoter restricted adenoviral replication as a potential treatment of prostate cancer metastasis. Accepted for presentation at the 8th International Conference on Gene Therapy of Cancer, San Diego, CA, December 1999.