



Partners in Cancer Care

## Curriculum Vitae

K. Kenneth Chao, MD

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### Additional Offices

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4721 Dallas Ranch Road, Antioch, CA 94531 T: (925) 778-0679

### Pre-Medical Education

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1990-1995 B.S., Biochemistry, University of California, Los Angeles, CA

### Medical Education

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1997-2002 M.D., School of Medicine, University of Texas Health Science Center at San Antonio (UTHSC-SA), TX

### Medical Training

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2002-2003 Internship, Transitional Program, William Beaumont Hospital, Royal Oak, MI

2003-2007 Resident Radiation Oncology, William Beaumont Hospital, Royal Oak, MI

2006-2007 Chief Resident Radiation Oncology, William Beaumont Hospital, Royal Oak, MI

### Professional Experience

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2008 -Present Radiation Oncologist, East Bay Medical Oncology-Hematology Associates / Epic Care, Pleasant Hill, Dublin and Antioch, CA

2007-2008 Clinical Instructor, Department of Radiation Oncology, NYU School of Medicine, New York, NY

2007-2008 Attending Physician, Department of Radiation Oncology, NYU Tisch Hospital, New York, NY

2007-2008 Staff Physician, Bellevue Hospital, New York, NY

### Clinical

#### 2003-Present **Brachytherapy**

- $^{192}\text{Ir}$  - high dose rate,  $^{103}\text{Pd}$ ,  $^{125}\text{I}$  - low dose rate Prostate
- $^{192}\text{Ir}$  - high dose rate Breast (interstitial and single/multi-balloon catheter, SAVI)
- $^{192}\text{Ir}$  - high dose rate Gynecological (interstitial and intracavitary)
- $^{192}\text{Ir}$  - high dose rate Head and Neck
- $^{192}\text{Ir}$  - high dose rate Soft Tissue Sarcoma
- $^{192}\text{Ir}$  - high dose rate Endobronchial
- $^{90}\text{Sr}$  - high dose rate Intravascular
- $^{125}\text{I}$  - low dose rate Ocular (plaque)
- Proficient in SWIFT® on-line brachytherapy planning software

## External Beam Radiotherapy

- 3D-conformal radiation therapy, including virtual and standard simulation techniques
- Intensity modulated radiation therapy(IMRT): breast, lung, prostate, head and neck, gyn.
- Stereotactic radiotherapy (cranial and extracranial)
  - Linac – based
  - Elekta Gammaknife® 4C
  - Accuray Cyberknife®
- Image-guided radiation therapy (IGRT)
  - Elekta Synergy®
  - Varian Trilogy®
  - Calypso® 4D Localization System
- Dynamic Parameter Machine Optimization (DMPO) algorithm
- Elekta Active Breathing Control Coordinator™
- Proficient in Pinnacle<sup>3</sup>® with AcQsim<sup>3</sup>®, and Eclipse® planning softwares

## Other Experiences

- Hyperthermia therapy
- Unsealed radioactive sources: <sup>131</sup>I radiotherapy, radioactive-labeled antibodies, Therasphere.
- Proficient in CT/PET and CT/MRI image fusion
  - Elekta Syntegra® Image Fusion algorithm

## Certifications

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2009 Board Certified in Radiology Oncology, American Board of Radiology

## Medical Licensure

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Licensed in California

## Affiliations/Hospital Privileges

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John Muir Medical Center, Walnut Creek Campus, Walnut Creek, CA

John Muir Medical Center, Concord Campus, Concord, CA

San Ramon Regional Medical Center, San Ramon, CA

Sutter Delta Medical Center, Antioch, CA

Eden Medical Center, Castro Valley Campus, Castro Valley, CA

Eden Medical Center, San Leandro Campus, San Leandro, CA

St Rose Hospital, Hayward, CA

Valley Care Hospital, Pleasanton, CA

## Memberships

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2008-Present Northern California Radiation Oncology Society

2004-Present American College of Radiology

2004-Present American College of Radiation Oncology

2004-Present American Brachytherapy Society

2004-Present	Radiological Society of North America
2003-Present	American Society of Radiation Oncology
2003-2008	Michigan Society of Therapeutic Radiology and Oncology
2003-2007	Association of Residents in Radiation Oncology
1998-Present	American Medical Association

## Committees/Professional Activities

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2007-Present	Member, Professional Advisory Board, The Wellness Community.
2007	Member, NYU General Clinical Research Center Protocol Review Committee
2007	Delegate, ASTRO SCOPE II
2006-2007	Vice-Chairman, Executive Committee, Association of Residents in Radiation Oncology
2005-2007	Officer, Executive Committee, Association of Residents in Radiation Oncology
2005-Present	Member, ASTRO Healthcare Economics Council, Regulatory Sub-Committee
2005-2007	Member, Corporate Cancer Committee, William Beaumont Hospital
2005-2007	Delegate, American Medical Association, Resident-Fellow Section
2005-2006	Representative, Association of Directors of Radiation Oncology Programs
2003-2006	Member, Residency Program Internal Review Committee, William Beaumont Hospital
1998-1999	President, UTHSC-SA Student Government Association
1998-1999	Board Member, UTHSC-SA Student Health Advisory Committee
1997-1999	Representative, Medical Class of 2001, UTHSC-SA

## Honors and Awards

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2007	Brachytherapy Fellowship, Seattle Prostate Institute
2006	Research Resident Grant, Radiological Society of North America
2006	Resident Research Seed Grant, American Medical Association Foundation
2006	Fellows Recognition Award, National Comprehensive Cancer Network
2006	Advocacy Day Lobby Grant, Amer. Soc. of Therapeutic Radiology and Oncology
2001	Research Fellowship, Alpha Omega Alpha Foundation
2000	Biomedical Engineering Research Fellowship, Whitaker Foundation

## Publication/Presentations

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### Peer-Reviewed Publications

Galerani A, Grills I, Hugo G, Kestin L, Mohammed N, **Chao K**, Suen A, Martinez A, Yan D. Dosimetric Impact of Online Correction via Cone-Beam CT-Based Image Guidance for Stereotactic Lung Radiotherapy. *International Journal of Radiation Oncology, Biology, Physics* 2010. [in press]

Grills I, Hugo G, Kestin L, Galerani A, **Chao K**, Wloch J, Yan D. Image-guided radiotherapy via daily online cone-beam CT substantially reduces margin requirements for stereotactic lung radiotherapy. *International Journal of Radiation Oncology, Biology, Physics* 2008;70(4):1045-56.

**Chao K**, Vicini F, Wallace M, Chen P, Gilbert S, Kunzman J, Bis G, Benitez P, Martinez A. Analysis of treatment efficacy, cosmesis and toxicity using the MammoSite breast brachytherapy catheter to deliver accelerated partial breast irradiation: The William Beaumont Hospital Experience. *International Journal of Radiation Oncology, Biology, Physics* 2007;69(1):32-40.

**Chao K**, Goldstein N, Yan D, Vargas C, Ghilezan M, Korman H, Kernen K, Hollander J, Gonzalez J, Martinez A, Vicini F, Kestin L. Clinicopathologic analysis of the extracapsular extension in prostate cancer: should the clinical target volume be expanded posterolaterally? *International Journal of Radiation Oncology, Biology, Physics* 2006;65(4):999-1007.

Wong B, Pandhoh N, Truong M, Diaz S, **Chao K**, Hou S, Gardiner D, Identification of chondrocyte proliferation following laser irradiation, thermal injury, and mechanical trauma. *Lasers in Surgery and Medicine*. 2005 Jul;37(1):89-96.

Schoder H, Erdi Y, **Chao K**, Gonen M, Larson S, Yeung H. Clinical implications of different image reconstruction parameters for interpretation of whole-body PET studies in cancer patients. *Journal of Nuclear Medicine*. 2004 Apr;45(4):559-566.

**Chao K**, Barnes J, Eng T, Duhya R. Sinonasal teratocarcinoma. *American Journal of Clinical Oncology*, 2004 Feb;27(1):29-32.

Pandhoh N, Truong M, Diaz S, **Chao K**, Hou S, Gardiner D, Wong B. Identification of chondrocyte proliferation with the fluorescent activating cell sorter following laser irradiation and thermal and mechanical trauma. *Proceedings of SPIE* 2003;4949:311-318.

**Chao K**, Ho K, Wong B. Measurement of the elastic modulus of rabbit nasal septal cartilage during Nd:YAG ( $\lambda=1.32\mu\text{m}$ ) laser irradiation. *Lasers in Surgery and Medicine*. 2003;32(5):377-383.

Truong M, **Chao K**, Pandhoh N, Hou F, Gardiner D, Wong B. Identification of chondrocyte cell division in intact rabbit cartilage grafts following photothermal heating using fluorescent activated cell counting. *Proceedings of SPIE* 2002;4609:342-346.

**Chao K**, Burden M, Wong B. Dynamic changes in the elastic modulus of lagomorph nasal septal cartilage during real-time Nd:YAG ( $\lambda = 1.32\mu\text{m}$ ) laser irradiation. *Proceedings of SPIE* 2001;4257:247-254.

**Chao K**, Cheung E, Armstrong W, Wong B. The effect of optical design on micromanipulator spot size using CO<sub>2</sub> laser irradiation. *Otolaryngology-Head and Neck Surgery* 2002 Jun;126(6):593-597.

Wong B, **Chao K**, Kim H, Chu E, Dao X, Gaon, M, Sun C, Nelson S. The porcine and lagomorph septal cartilages: models for tissue engineering and morphologic cartilage research. *American Journal of Rhinology*, 2001;15:109-116.

**Chao K**, Wong B, Kim H, Milner T, Nelson J. Viability of porcine nasal septal cartilage grafts following Nd:YAG ( $\lambda = 1.32\mu\text{m}$ ) laser radiation. *Proceedings of SPIE* 2000;3914:543-552.

Wong B, Milner T, Kim H, **Chao K**, Sun C, Sobol E, Nelson J. Proteoglycan synthesis in porcine nasal cartilage grafts following Nd:YAG ( $\lambda = 1.32\mu\text{m}$ ) laser-mediated reshaping. *Photochemistry and Photobiology*, 2000 Feb;71(2):218-224.

#### **Other Publications**

**Chao K**. Stereotactic body radiotherapy of a solitary lung tumor with on-line corrections using Elekta Synergy. Elekta Clinical Application Case Study. 2006.

## Abstracts and Presentations

**Chao K**, Lymberis S, Racska M, Fenton-Kerimian M, Magnolfi-Bozzi C, Formenti S. "Objective Evaluation of Breast Fibrosis in Patients Treated with Accelerated Partial Breast Irradiation (APBI) Using the BTC-2000 Device." Accepted for presentation at the 50<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Boston, MA.

Lymberis S, Becker S, Gidea-Addeo D, **Chao K**, Jozsef G, DeWyngaert K, Formenti S. "Prospective Study of Cone-Beam CT Guidance for Prone Accelerated Partial Breast Irradiation (APBI) Setup." Accepted for presentation at the 50<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Boston, MA.

Formenti S, Freedman K, **Chao K**, Adams S, Fenton-Kerimian M, Donach M, Demaria S. "Abscopal Response in Irradiation Patients: Results of "A Proof of Principle" Trial. Accepted for presentation at the 50<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Boston, MA.

**Chao K**, Grills I, Kestin L, Wong O, Suen A, Wloch A, Yan D, Hugo G. "Radiographic and Metabolic Response of Solitary Lung Tumors to Image-Guided Stereotactic Radiotherapy." Presented at the 49<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Los Angeles, CA, October 28-November 1, 2007. Abst# 157.

Wallace M, **Chao K**, Vicini F, Mitchell C, Chen P, Ghilezan M, Benetiz P, Martinez A. "Interim Analysis of Treatment Efficacy, Cosmesis and Toxicity Using the MammoSite Breast Applicator to Deliver Accelerated Partial Breast Irradiation." Presented at the 49<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Los Angeles, CA, October 28-November 1, 2007. Abst# 2037.

Suen A, Chen P, **Chao K**, Galerani A, Martinez A. "Clinical Correlation of Radiation Dose to Anatomic Structures with Treatment Related Chronic Dysphagia in Definitive Chemoradiotherapy for Head and Neck Cancers." Presented at the 49<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Los Angeles, CA, October 28-November 1, 2007. Abst# 2388.

Galerani A, Kestin, Grills I, **Chao K**, Suen A, Falkowski J, Lala V, Martinez A, Robertson J. "The Value of Endoscopic Ultrasound (EUS) and Positron Emission Tomography (PET) in Predicting Outcome Following Combined Modality Treatment for Esophageal Cancer." Presented at the 49<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Los Angeles, CA, October 28-November 1, 2007. Abst# 2152.

Grills I, Hugo G, Kestin L, **Chao K**, Wloch J, Yan D. "Image Guided Radiotherapy (IGRT) via Online Cone Beam CT Substantially Reduces Martin Requirements for Stereotactic Lung Radiotherapy." Presented at the 49<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Los Angeles, CA, October 28-November 1, 2007. Abst# 1032

Patel S, Jagsi R, Cook N, Parkinson C, **Chao K**, Hansen E, Huang E, Petit J, Wilson J, Hughes-Davies L, "Survey of Breast Oncology Teaching of Medical and Radiation Oncology Residents in the United States and the United Kingdom." Presented at the 29<sup>th</sup> San Antonio Breast Cancer Symposium, San Antonio, TX. December 15, 2006. Abst# 2046.

**Chao K**, Grills, I, Yan D, Kestin L, Martinez A, Hugo, G. "Reducing Dosimetric Treatment Uncertainties in Hypofractionated Stereotactic Body Radiotherapy (SBRT) Planning for Lung Tumors." Presented at the 48<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Philadelphia, PA, November 5-9, 2006. Abst# 2807.

Suen A, **Chao K**, Grills I, Yan D, Kestin L, Martinez A, Hugo G. "The Dosimetric Impact of Translation-Only Setup in Cone-Beam CT Image-Guided Stereotactic Radiotherapy for Lung Tumors." Presented at the 48<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Philadelphia, PA, November 5-9, 2006. Abst# 2758.

Grills I, Hugo G, **Chao K**, Kestin L, Wloch J, Martinez A, Yan D. "Initial Clinical Experience with Extracranial Stereotactic Lung Radiotherapy: Advantages of Cone-Beam CT Image Guidance over Stereotactic Body Frame Immobilization Alone." Presented at the 48<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Philadelphia, PA, November 5-9, 2006. Abst# 2468.

Battu M, Fitch D, **Chao K**, Grills I, Margolis J, Wong C, Chmielewski R, Welsh R, Kestin L. "Rate of Disease Progression in Untreated Non-Small Cell Lung Cancer Patients." Presented at the 48<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Philadelphia, PA, November 5-9, 2006. Abst# 2453.

**Chao K**, Grills I, Suen A, Wloch J, Yan D, Kestin L, Martinez A, Hugo G. "The Impact of Cone-Beam CT-Based Image Guidance in Optimizing the Efficacy of Extracranial Stereotactic Radiotherapy of Lung Tumors: A Dosimetric Analysis." Presented at the 35<sup>th</sup> William Beaumont Hospital Research Forum, Royal Oak, MI, June 7, 2006.

**Chao K**, Yan D, Lockman D, Goldstein N, Kestin L, Martinez, A. "Rethinking the CTV Definition: Optimal Implementation of Prostate IGRT Requires Attention to Extracapsular Extension." Presented at the 47<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Denver, CO, October 16-21, 2005.

Ghilezan M, Vargas C, Boike T, Byrd C, **Chao K**, Gustafson G, Vicini F, Martinez A, Kestin L. "5-Year Results Between HDR and LDR Brachytherapy for Favorable Prostate Cancer." Presented at the 47<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Denver, CO, October 16-21, 2005.

**Chao K**, Vargas C, Fitch D, Boike T, Byrd C, Krauss D, Gustafson G, Vicini F, Martinez A, Kestin L. "HDR and LDR Brachytherapy for Favorable Prostate Cancer: An Analysis Based on Different Biochemical Failure Definitions." Presented at the 26<sup>th</sup> Annual Meeting of the American Brachytherapy Society, San Francisco, CA, June 1-3, 2005.

**Chao K**, Kestin L, Vargas C, Goldstein N, Yan D, Vicini F, Martinez A. "Clinicopathologic Analysis of the Extracapsular Extension in Prostate Cancer: Should the Clinical Target Volume be Expanded Posterolaterally?" Presented at the 46<sup>th</sup> Annual Meeting of the American Society of Therapeutic Radiology and Oncology, Atlanta, GA, October 2-6, 2004. Abst# 1015.

Pandhoh N, Truong M, Diaz S, **Chao K**, Hou S, Gardiner D, Wong B, "Identification of Chondrocyte Proliferation With the Fluorescent Activating Cell Sorter Following Laser Irradiation and Thermal and Mechanical Trauma." Presented at the American Society of Lasers in Surgery and Medicine, 23<sup>rd</sup> Annual Meeting, Anaheim, CA, April 9-13, 2003.

**Chao K**, Truong M, Pandhoh N, Gardiner D, Wong B. "Identification of Chondrocyte Cell Division in Intact Rabbit Cartilage Grafts Following Photothermal Heating Using Fluorescent Activated Cell Counting." Presented at the American Society of Lasers in Surgery and Medicine, 21<sup>st</sup> Annual Meeting, New Orleans, LA, April 20-22, 2001.

**Chao K**, Burden M, Wong B. "Dynamic Changes in the Elastic Modulus of Lagomorph Nasal Septal Cartilage During Real-Time Nd:YAG ( $\lambda = 1.32\mu\text{m}$ ) Laser Irradiation." Presented at the Symposium for Laser-Tissue Interaction XII: Photochemical, Photothermal, and Photomechanical, at BIOS'2001, San Jose, CA, Jan 24, 2001.

**Chao K**, Wong B. "Selective Enzymatic Digestion of Cartilage Tissue Matrix: A Potential New Method to Reshape, Recontour, or Reduce Cartilage Tissue." Presented at the Western Conference of the Triological Society, Carlsbad, CA, Jan 5, 2001.

Wong B, Rasouli A, **Chao K**. "Photothermal Interactions in Cartilage: Reshaping and Regeneration." Presented at the College of Medicine Faculty Research Poster Session, UC Irvine, Irvine, CA, Apr 7, 2000.