

CHARLES DAVID HECHTMAN

Education

- 2001 - 2005** Mallinkrodt Institute of Radiation Oncology, Washington University, St. Louis, MO
Resident – Radiation Oncology
- 2000 - 2001** Cooper University Hospital, Camden, NJ
Intern – Internal Medicine
- 1995 - 2000** UMDNJ, Robert Wood Johnson Medical School, Piscataway, NJ
M.D. Medicine
- 1976 - 1980** Polytechnic Institute of Brooklyn, Brooklyn, NY
Ph.D. Electro-Physics
Major: Plasma Physics
Minor: Electrical Engineering
Minor: Fluid Dynamics
- 1975 - 1976** Polytechnic Institute of Brooklyn, Brooklyn, NY
M.S. Electrical Engineering
- 1971-1975** Polytechnic Institute of Brooklyn, Brooklyn, NY
B.S. Electrical Engineering (Cum Laude)

Clinical Experience

- 10/2007 – Present** **Radiation Oncologist**
Regional Oncology Center
Halifax Medical Center
303 N. Clyde Morris Blvd.
Daytona Beach, FL
- 7/2005 – 9/2007** **Assistant Professor of Radiation Oncology, Tampa VA / Moffat faculty appointment.**
Responsibility for evaluation, treatment, and follow up of hundreds of cancer patients.
Treatment closely coordinated with Medicine Oncology and Surgery:
Head & neck and prostate cancer with IMRT and 3D conformal
Lung, esophageal, bladder, CNS, Hodgkin's Disease, non-Hodgkin's lymphoma, sarcoma, rectal, anal, and breast cancer with 3D conformal
Palliation of brain metastasis, osseous metastasis, Superior Vena Cava Syndrome
Heterotrophic ossification
Cancer Committee
ENT Tumor Board
Thoracic Tumor Board
GU Tumor Board
GI Tumor Board
PET/CT Utilization Committee
Treatment planning with AcQSim and ADAC systems

Varian 2300, portal imaging, MLC

Medical Licenses and Boards

Florida and Missouri

Board eligible, written boards passed, taking oral boards June 2008.

Clinical Experience During Residency

**7/2001 –
6/2005**

Intensity Modulated Radiation Therapy: Performed inverse treatment planning using various treatment optimization software including PEACOCK, HELIOS and XIO. Evaluated target coverage. Assured quality of daily treatment delivery and set-up.

Prostate Brachytherapy: performed preimplant volume study. Optimized seed distribution using the VARISEED treatment planning software.

High Dose Rate (HDR) and Low Dose Rate (LDR) Gynecologic Brachytherapy: calculated source strength, evaluated implant geometry and performed interstitial, LDR, and HDR intracavitary implants.

Gamma Knife Radiosurgery: Reviewed indications for and suitability of patients for radiosurgery. Delineated normal tissue and target volumes. Optimized weighting of beams using the Leksell GAMMAPLAN software. Determined isodose prescription. Evaluated normal tissue and target coverage by dose-volume histogram analysis.

Breast Interstitial Brachytherapy: Inserted brachytherapy catheters in lumpectomy site. Evaluated catheter distribution using post-implant CT scan. Optimized dwell position activation. Monitored daily treatment delivery.

Three-Dimensional Conformal Radiation Therapy: Delineated target volume and normal tissue structures. Evaluated dose-volume information to optimize dose delivery and critical normal tissue sparing.

Research Experience During Residency

**2001 -
Present**

Percent depth dose for P-32 treated craniopharyngioma with and without plating:

Demonstrated a five fold increase in dose near the optic chiasm.

Recommended treatment modification to potentially preserve vision.

Publication in IJROBP

Optimization of HDR planning:

Numerical least squares solution for vaginal cylinder subject to source constraints

Extension to more complex systems such as breast brachytherapy with multiple catheters

Experience Prior to Residency

1998

UMDNJ, Robert Wood Johnson Medical School, Piscataway, NJ

Research - Neuroscience Department

Mathematical modeling of cortical cell division in rats' brains

1989 - 1995

Stevens Institute of Technology, Hoboken, NJ

Associate Professor of Electrical Engineering

Found an eigenfunction approximate solution to aperture limited planar open structures including

microstrip, coplanar line, and patch antennas.

- 1982 - 1989** AT&T Bell Laboratories, Hopewell, NJ
Distinguished Member of Technical Staff
Found solution to complex routing problems.
A heuristic approach which models optimal routes as field lines between point charges
An extension of routing algorithms for multiplexed circuits
Created a controlled Impedance Test Fixture.
This work is a key element in a state-of-the-art automatic circuit board and VLSI tester.
Designed a GaAs Driver.
This work is a key element in a state-of-the-art automatic circuit board and VLSI tester.
- 1986** Polytechnic University, Brooklyn, NY
Adjunct Associate Professor of Electrical Engineering
Electrical Engineering, Devices, Models, and Amplification
- 1980 - 1982** Avco Systems Division, Woburn, MA
Staff Scientist
Cathode longevity study

Consulting and Grants

- 1993 – 1994** United States Army, Fort Monmouth, NJ
Consultant
Scientific Services Agreement (STAS) – Battelle TCN 93029
- 1991 – 1992** Geo Centers for U.S. Army, Fort Monmouth, NJ
Consultant
Contract # DAAL01-89-C-0927
- 1991** National Science Foundation, Washington, D.C.
Principle Investigator
NSF: Equipment Grant

Patents and Publications

Please see pages 4 and 5

Didactic and Physics Presentations

Vaginal Cancer	IMRT
Hypopharyngeal Cancer	Stereotactic Body Frame
Laryngeal Cancer	Gamma Knife
Non-small Cell Lung Cancer	

Teaching Experience

Circuits and systems I	Circuits and systems II
Linear systems	Analytic Methods I (Complex variables)
Fourier Optics	Microwaves I
Microwaves II	Electric Power Systems
Electromagnetics	Senior design

Professional Memberships

American College of Radiology
American Society of Therapeutic Radiology and Oncology
American Medical Association

Honor Societies

Sigma Chi (Research honor society)
Tau Beta Pi (Engineering honor society)
Eta Kappa Nu (Electrical Engineering honor society)

Awards

1993 Electromagnetics Academy
1987 Bell Labs Exceptional Contribution Award for the design and prototype of a GaAs Driver
1989 Distinguished Member of Technical Staff, AT&T Bell Labs, Engineering Research Center, Test Research and Development Group

Journal Publications

1. C. Hechtman, Z. Li, D. Mansur, C. Perez, R. Myerson, J. Simpson, J. Anders, C. Wu, C. Palucci, *Dose distribution outside of a sphere of P-32 chromic phosphorous colloid*, International Journal of Radiation Oncology, Biology, Physics, Volume 63, Issue 3, Pages 961-968, November 2005.
2. C.D. Hechtman, E.H. Lenzing, and B.S. Perlman, *On the use of planar scattering problem techniques to analyze thin planar quasi-magneto-static shielding*, Applied Computational Electromagnetic Society Journal, Aug-Sept 1994.
3. Hsue and C.D. Hechtman, *Transient Responses of an Exponential Transmission Line and its Applications to High-Speed Backdriving in In-Circuit Test*, IEEE Trans. Microwave Theory Tech., vol MTT-42, pp. 458-462, March 1994.
4. Cui, C.D. Hechtman, and Horing, *Phase shifting of guided electromagnetic waves in quantum well - dielectric slab structure*, J. of Physics D: Applied Physics, July 1993, Vol 26, No. 7.
5. C.D. Hechtman, H. Zmuda, and D. Gabbay, *A Frequency Dependent Basis function Applied to Microstrip*, IEEE Trans. Microwave Theory Tech., vol MTT-39, pp. 893-896, May 1991.
6. Hsue and C.D. Hechtman, *Transient Analysis of Nonuniform, High-pass Transmission Lines*, IEEE Trans. Microwave Theory Tech., vol MTT-38, pp. 1023-1030, August 1990.
7. C.D. Hechtman and C.W. Hsue, *Time domain scattering parameters for a lossy dielectric*, J. Appl. Phys., 67(5), pp. 2199-2209, 1 March 1990.
8. Hsue and C.D. Hechtman, *Frequency Insensitive transmission and reflection coefficients of multilayered media*, J. Opt. Soc. Am. A 6(11) pp. 1669-1674 Nov 1989.
9. C.D. Hechtman and C.W. Hsue, *Transient Analysis of A Step Wave Propagating In a lossy Dielectric*, J. Appl. Phys. 65(9), pp 3335-3339, 1 May 1989.
10. C.D. Hechtman and J. Lewandowski, *A Flux Directed approach to a wire routing Problem*, IEEE VLSI Technical Bulletin 4(3/4) sept nov 1989 pp 124-138.
11. C.D. Hechtman, *In-Circuit Test Fixture*, IEEE Trans. Ind. Electron., Vol. 36, no. 2, pp 192-196, May 1989.
12. Tsai and C.D. Hechtman, *GaAs Driver/Sensor for a High-Speed Test System*, IEEE Trans. Ind. Electron., Vol. 36, no. 2, pp 175-184, May 1989.
13. C.D. Hechtman and Z. Levine, *An Electrostatic Solution to a Specialized Routing Problem*, J. Appl. Phys., 62(5), pp. 2116-2122, 1 Sept. 1987.
14. C.D. Hechtman and B. Cheo, *Z-Pinch Instability in an Electrically Exploding Thin Shelled Tubes*, J. Appl. Phys., 56(11), pp. 3223-3231, 1 Dec 1984.
15. Ph.D. Thesis - *Investigation of Electrically Exploding Thin Shelled Tubes*, University microfilms, Ann Arbor MI, June 1981.
16. DeNeff and C.D. Hechtman, *Numerical Study of the flow due to a cylindrical implosion*, Computers and Fluids, Vol 6, pp. 185-202, 1978.

Patents

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| 1. Quantum Well Optical Waveguide | U.S. Pat 5,811,830, September 1998 |
| 2. High Power Ultra Broadband Antenna | U.S. Pat. 5,479,180, December 1995 |
| 3. High T_C superconducting microstrip phase shifter having tapered optical beam pattern regions | U.S. Pat. 5,385,883, January 1995 |
| 4. Method for Routing conductive paths | U.S. Pat. 5,032,991, July 1991 |
| 5. High frequency in-circuit test fixture | U.S. Pat. 4,837,507, June 1989 |
| 6. High Speed Driver | U.S. Pat. 4,795,920, January 1989 |
| 7. CPI Magnetic Alignment | U.S. Pat. 4,778,635, October 1988 |
| 8. High Speed Driver | U.S. Pat. 4,704,550, November 1987 |
| 9. Electrostatic Router | U.S. Pat. 4,642,890, February 1987 |
| 10. High Speed Test Fixture | U.S. Pat. 4,574,236, March 1986 |

Conference Papers

1. *On The Inadvertent Under Dosing Of A Complex Spheroid Instilled With P-32 Chromic Phosphorous Colloid*, Proffered Papers – Physics, 26th American Brachytherapy Society, June, 2005, San Francisco, California.
2. with Z Li, Perry Grigsby and Mark Dicocco, Washington University, St. Louis, MO
3. *Percent Depth Dose for a Sphere of P-32 Chromic Phosphorous Colloid*, Joint Brachytherapy Meeting GEC/ESTRO-ABS-GLAC, Poster # 177, May 13-15, 2004, Barcelona, Spain, with Z. Li, D. Mansur, and P. Grigsby.
4. *Ultra-Wideband Antenna for High Power Operation*, IEEE, Workshop on Millimeter-Wave Power Generation and Beam Control, University of Alabama, Huntsville, AL, September 14, 1993, with E.H. Lenzing, B.S. Perlman, and H.F. Lenzing.
5. *First Arriving Wave and Transition Ripple of Transient Responses In Nonuniform Transmission Lines*, IEEE, Eighth Annual Benjamin Franklin Symposium on Antenna and Microwave Technology, March 24, 1990, with C.W. Hsue.
6. *In-Circuit Test Fixture*, IEEE International Test Conference, 1989, with S.J. Tsai.
7. *GaAs Driver/Sensor for a High-Speed Test System*, IEEE International Test Conference, 1989, with S.J. Tsai.