Taking Cancer Treatment Into the 21st Century

"THE HUB & SPOKE MODEL"

AAPM MEETING
NEW ORLEANS
2-16-13

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Director of Radiation Oncology
and Proton Therapy
Willis Knighton Cancer Center

WILLIS KNIGHTON CANCER CENTER & RADIATION ONCOLOGY

- 70,000 sq.ft. Cancer Center with a thirty thousand sq.ft. addition planned containing a 4th vault (Tomo) and Proton therapy
- American College of Surgeons COC accreditation
- Four radiation oncologists, Six medical oncologists and two gynecologic oncologists with subspecialty interests.
- Radiation Oncology has Dual Accreditation by ACR and ACRO (one of 12 in the U.S)
- Our Team: 4 boarded M.D.'s, 2 PhD and 3 Master level physicists, including residents, 4 RN's, 2 dosimetrist, numerous therapists, auxiliary and support staff, two engineers, and many student researchers

Commission on Cancer

ACR American College of Radiology Accredited Facility

ACRO American College of Radiation Oncology Integrating Science and Technology into Patient Care

WKCC Radiation Oncology

70-100 patients a day receiving therapy

Active SBRT Program

Diverse skin cancer program
(with superficial X-rays, brachytherapy and electrons)

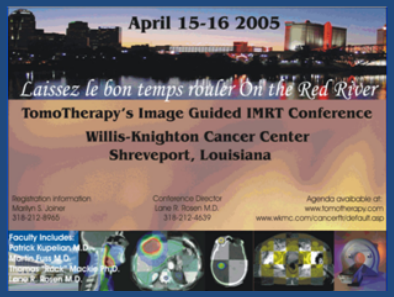
All CT-based HDR brachytherapy

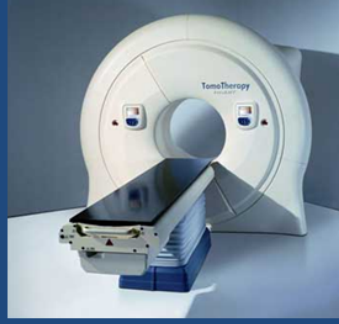
First 2 Varian 21EX units in the U.S.
- First 2 Amorphous silicon On-line imagers
- First 120 Leaf MLC
- Cone-beam CT and OBI retrofits
- Large open vaults capable of TBI

TomoTherapy Center of Excellence:
4th unit in the U.S.
- First WART/Craniospinal/SBRT

First SBRT with TOMO 12-2003
Largest lung SBRT series

Hosts of first IG-IMRT International Meeting
attended by physicians and physicists from
16 countries and 5 continents





WKCC Radiation Oncology

Brachytherapy (Nucletron):

- One of the first U/S guided prostate implants
- One of the first coronary restenosis brachytherapy procedures
- Quadramet administration (non-research)
- All-CT brachytherapy program

- One of the largest Y-90 liver brachytherapy series in the U.S.
- One of the first centers delivering interstitial CT based HDR brachytherapy

- 650+ brachytherapy procedures in 2012 including, lung, biliary, rectum, skin, head and neck, liver, breast, prostate, gyn (LDR and HDR), eyes, and infusional isotopes

WKCC Radiation Oncology

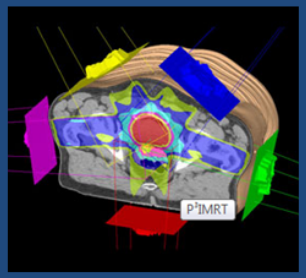
- Introduced true 3-D therapy -1997
  ADAC Pinnacle (first 5 in U.S.)

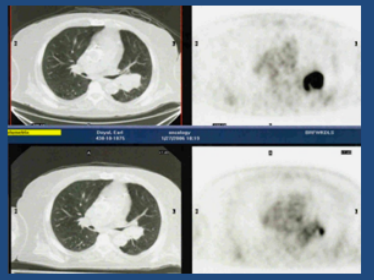
- Introduction of IMRT -1998.
  PEACOCK (first 15 in U.S.)

- Introduction of IG-IMRT- 2003
  TomoTherapy (4th in U.S.)

- Dedicated CT Simulator-1999

- Oncology dedicated PET scan
- (8th PET in U.S.) with PET/CT fusion since 2000 (Mirada Beta site)





WHAT TRIGGERED INTEREST IN PARTICIPATING IN A MEDICAL PHYSICS TRAINING PROGRAM?

- Our early adoption and leadership role in advanced technologies is a gold mine for physicists-in-training
- Longstanding summer rotation site for medical physicists and nuclear physicists from the University of Missouri
- All previously employed junior physicists passed all of their boards on first attempts

WILLIS-KNIGHTON HEALTH SYSTEM

WHAT TRIGGERED INTEREST IN PARTICIPATING IN A MEDICAL PHYSICS TRAINING PROGRAM?

We wanted more teaching opportunities
and felt we could offer value to
physics residents:

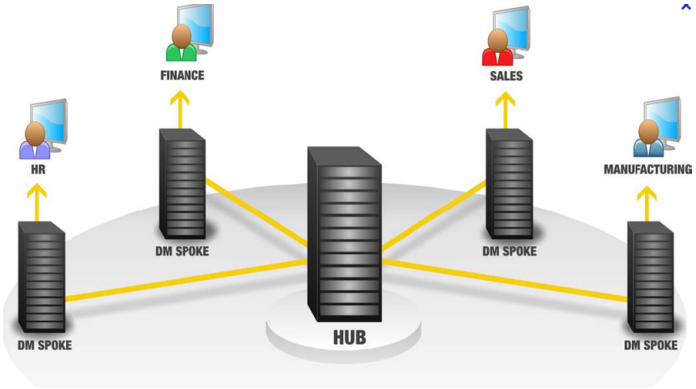
- Radiation Oncology residency program was considered
- Medical student rotations already in place
- Physicists interested in TomoTherapy and SBRT often rotated in the department
- Brachytherapy training site relationship with Nucletron for MD's, residents and physicists under development
- Undergraduates and graduate students from LSUS, La Tech and LSUHSC rotate to WKCC

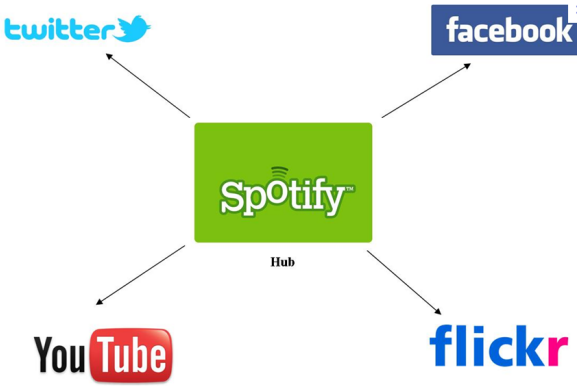
WHAT TRIGGERED INTEREST IN PARTICIPATING IN A MEDICAL PHYSICS TRAINING PROGRAM?

- We were pursuing a medical physics residency program on our own with limited support staff ,background and knowledge of the administrative requirements

- A chance to determine the type of training medical physicists will receive

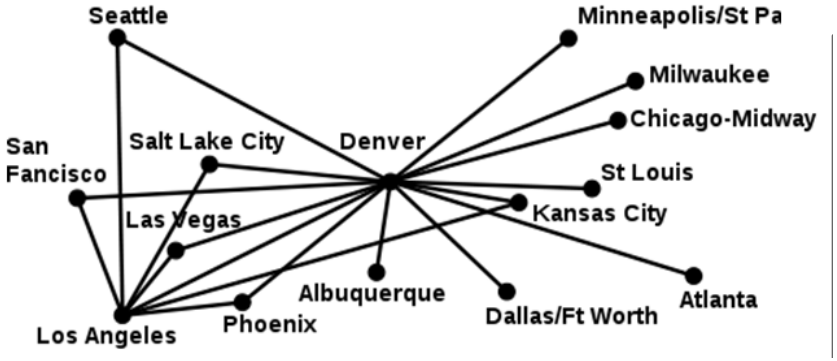
- Opportunity for collaboration and collegiality among ourselves and other private centers and academic practices

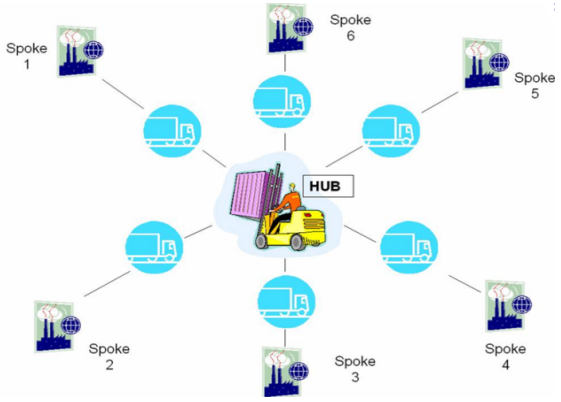




Business
Internet
Airlines
Analytics
Logistics

The Hub and Spoke Model





PHYSICIAN RESPONSIBILITIES TO RESIDENCY TRAINEES:

- Clinical radiation oncology for the physicist:

  Examples:
  - Skin cancer patient evaluation
  - Anatomy instruction
  - Understanding of tolerance constraints
  - General dose requirements

- Clinical radiation biology for the physicist:

  Examples:
  - BED concepts
  - EQ (2Gy)
  - RBE with Protons

PHYSICIAN RESPONSIBILITIES TO RESIDENCY TRAINEES:

- Assist with selection process
- Real world job preparation throughout training:
  Learn what is expected from a clinical radiation physicist
- Exit interview: Determination of the strengths and weaknesses of a training program and discussion of a trainees areas requiring honing
- Assistance with preparation of the resume (C.V.)

ADVANTAGES TO YOUR HOSPITAL AND DEPARTMENT:

- A community and national service
- Opportunity for a smaller hospital system or department to have a larger regional impact on the standard of care
- Higher likelihood of CAMPEP accreditation
- Marketing advantage. A "differentiator"

ADVANTAGES TO YOUR HOSPITAL AND DEPARTMENT:

- Keeps current physicists current (teaching and oversight)
- Recruitment of future staff that understand your system
- Research projects and publications
- Reasonable cost for capable in-training physicists to assist your current physics staff

AN INFORMAL POLL

- 9 therapists
- 3 physicists
- 2 administrators
- 3 M.D.'s

When asked "Has the addition of a physics residency program improved the overall quality in the department?"

The answer was uniformly "YES"