Hub and Spoke Webinar #1: General Structure, Basics & Responsibilities from a Main Site Perspective

Joseph P. Dugas, Ph.D., DABR
Mary Bird Perkins Cancer Center
Baton Rouge, LA

Robert J. Pizzutiello, M.S., FACR, FAAPM, FACMP
Upstate Medical Physics/ Landauer Medical Physics
Victor, NY
Hub & Spoke
Therapy Medical Physics Residency Training Program

Joseph P. Dugas, Ph.D., DABR
Mary Bird Perkins Cancer Center, Baton Rouge, LA
Acknowledgements

B. Parker¹, J.P. Gibbons², J. Duhon³, C. Yang⁴, H. Wu⁵, J. Fontenot⁶,⁷

¹University of Texas Medical Branch, Galveston, TX
²Ochsner Health System, New Orleans, LA
³OncoLogics, Inc., Lafayette, LA
⁴University of Mississippi Medical Center, Jackson, MS
⁵Willis-Knighton Cancer Center, Shreveport, LA
⁶Mary Bird Perkins Cancer Center, Baton Rouge, LA
⁷Louisiana State University, Baton Rouge, LA
Outline

• About MBPCC
• MBPCC Hub & Spoke Residency Program Description
  – Motivation
  – Residency Consortium
  – Program Governance
• Resident Recruitment & Placement
• Resident Training
• Resident Evaluation
• Program Growth and Milestones
• Accreditation Process
• Conclusions
Mary Bird Perkins Cancer Center

To improve survivorship and lessen the burden of cancer through expert treatment, compassionate care, early detection, research and education

- Community owned, nonprofit center
- 5 locations across Southeast Louisiana
- Treat ~200 patients per day
Residency Program Description

Motivation

- Joint Louisiana State University (LSU) and Mary Bird Perkins Cancer Center (MBPCC) M.S. and Ph.D. in Medical Physics program (CAMPEP accredited)
  - Graduates ~6 students per year
    - Consider ABR Residency mandate
    - Want residency positions for each LSU program graduate
  - Goal to accommodate ~6 new residents per year (12 total)

- MBPCC cannot accommodate all 12 positions
  - AAPM Report 90 recommended physicist-to-resident ratio of 2:1
    - 11 MBPCC physicists ➔ 5 total residents maximum
    - 2-3 new residents per year (2-year program)
  - Financial constraints
Residency Program Description

How do we accommodate additional positions per year?

- Solution has been to develop partnerships with regional medical physics groups to provide clinical residency training

- Hub-and-spoke model (TG-133)
  - MBPCC (hub) responsible for initial accreditation, curriculum development, resident performance tracking, scheduling exams, clinical training, etc.
  - Partner sites (spokes) responsible for clinical training
Residency Program Description
Residency Consortium

• Benefits from facilities with good clinical physics that are interested in training medical physicists but limited administrative resources to start and maintain program

• Offers both hub & spokes access to broader range of clinical procedures, technology, etc. than typically available at a single institution

• MBPCC began approaching potential partners in 2010
  • Currently 3 partner sites in Consortium with MBPCC

• MBPCC continues to explore potential partners to expand training capacity
Residency Program Description
Hub & Spoke Commitment to Program

• MBPCC (Hub) :
  – Develop the program curriculum
  – Program administration (coordinating advisory committee, resident evaluations, oversee compliance with training requirements)
  – Work with affiliates to obtain/maintain CAMPEP accreditation

• Affiliate (Spoke) :
  – Accept new residents
  – Provide for residents’ salary (at appropriate PGY levels), benefits, and professional development funds
  – Appoint affiliate program director responsible for implementation of program
  – Provide appropriate resources to support the residency program (e.g., space, administrative, equipment)
Residency Program Description

Affiliate Agreements

• Generic agreement developed outlining roles & responsibilities of MBPCC and affiliate sites

• Minor changes (i.e., unrelated to residency training) made in each agreement specific to the affiliate’s program

• Completion of final agreements took ~1 year
Program Governance

• Program Committee oversees program policies and resident progress

• Committee meetings:
  • Frequency: ~ monthly (minimum quarterly)
  • Affiliate PD’s participate via Skype
  • Agenda
    • Recruitment, Curriculum, Resident Progress, Accreditation, etc.
    • Resident issues (Senior resident)
Program Governance

Residency Program Committee:
• Jonas Fontenot, PhD, Program Director, MBPCC Chief of Physics
• Joseph Dugas, PhD, Deputy Program Director
• Daniel Neck, MS, MBPCC Director of Clinical Physics
• Wayne Newhauser, PhD, LSU Chief of Physics
• Mary Ella Sanders, MD, MBPCC Physician
• Frank Apollo, MBPCC Dosimetrist
• Yolanda Augustus, MBPCC Therapist
• Terry Wu, PhD, Program Director, Willis-Knighton
• Claus Yang, PhD, Program Director, U. of Miss Med Center
• John Duhon, MS, Program Director, Oncologics
• Bart Morris, Senior Resident
Recruitment and Placement

• All institutions of the MBPCC Medical Physics Residency participate in the national Med Phys Match (National Matching Services)

• All applicants for any residency spot in our consortium submit a single application to the centralized (MP-RAP) database
  – Each facility in the Consortium select, evaluate, and rank candidates separately.
Recruitment and Placement

• All applicants independently considered at all sites
  – Programs identify applicants they would like to interview
  – Nominally, all LSU students who have indicated interest in training at their
    facility and, potentially, several external applicants

• After interviews, applicants and programs submit their rankings to the
  NMS (MedPhys Match)
  – Each affiliate has a separate NMS ID
  – Each affiliate submits an independent MedPhys Match rank list

• MBPCC and the affiliates agree to give all acceptable LSU students
  priority ranking. LSU students are encouraged to give the Consortium
  sites priority ranking.

• Applicants are matched with programs by MedPhys Match algorithm

• If LSU students rank consortium members high, most likely scenario
  is that each site will receive an LSU student
Recruitment and Placement Timeline
(used for 2015 match)

December 31: Application deadline for the CAP

January 1- February 28: Applicant interviews

March 4-20: Rank order lists submitted to NMS

March 27: Match results released

March 27- April 26: Program Directors send letters of confirmation to match applicants. List of unmatched applicants provided to programs with unfilled positions.

- Dates for upcoming 2016 MedPhys Match are slightly different –
  - https://www.natmatch.com/medphys/aboutdates.html -
Resident Training

• LSU students (or other CAMPEP graduates) arrive with all didactic requirements satisfied
  – No didactic component of residency training

• All residents simultaneously assigned to clinical work and a monthly special project for which they submit a report

• Most training occurs at each resident’s “home” institution
  – Some workshops/topics allow for cross-institutional training

• At MBPCC, residents credentialed after 1st year
  – Credentialed for duties of non-ABR physicist
  – Must demonstrate competency in areas of credentialing
  – Two purposes
    • Resident becomes comfortable with independent work
    • Cost effective as resident assigned ½ clinical FTE
## Resident Training

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MONTH</th>
<th>CLINICAL ROTATION</th>
<th>PROJECT</th>
<th>PROJECT MENTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXXX</td>
<td>July</td>
<td>Orientation (CT &amp; Accelerators)</td>
<td>Orientation</td>
<td>Fontenot/Dugas</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td>Dosimetry</td>
<td>Radiation Safety and Regulations</td>
<td>Stam</td>
</tr>
<tr>
<td>September</td>
<td>LDR = Seed implants + Tomo + BR Closeouts</td>
<td>Dosimetric Systems</td>
<td>Dugas</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>HOU / GON</td>
<td>Daily / IMRT QA Device Commissioning</td>
<td></td>
<td>Perrin</td>
</tr>
<tr>
<td>November</td>
<td>HDR = HDR + BR Clinic + BR IMRT</td>
<td>IGRT commissioning</td>
<td>Fontenot</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>SRS = Novalis + BR Initials</td>
<td>MU Check commissioning</td>
<td>Perrin/Dugas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>January</td>
<td>Dosimetry</td>
<td>Gantry-Static IMRT: Commissioning &amp; QA</td>
<td>Perrin</td>
</tr>
<tr>
<td></td>
<td>February</td>
<td>HDR = HDR + BR Clinic + BR IMRT</td>
<td>Total Skin Electron Commissioning</td>
<td>Dugas</td>
</tr>
<tr>
<td>May</td>
<td>SRS = Novalis + BR Initials</td>
<td>4DCT and Gating: Commissioning &amp; QA</td>
<td>Chu</td>
<td></td>
</tr>
<tr>
<td>XXXX</td>
<td>June</td>
<td>HOU / GON</td>
<td>TPS Commissioning</td>
<td>Neck</td>
</tr>
<tr>
<td>July</td>
<td>LDR = Seed implants + Tomo + BR Closeouts</td>
<td>CT / PET acceptance and commissioning</td>
<td>Dugas</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>HAM / COV</td>
<td>Linac Acceptance &amp; Commissioning</td>
<td>Perrin</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>HOU / GON</td>
<td>TomoTherapy Program Commissioning</td>
<td>Chu</td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>Project</td>
<td>Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Orientation</td>
<td>Gantry Static-IMRT: Acceptance, Commissioning and QA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CT/PET-Simulators: Acceptance and Commissioning</td>
<td>Intraoperative Therapy commissioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IGRT: Acceptance and Commissioning</td>
<td>TPS: Commissioning of photons and electrons in Pinnacle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dosimetric Systems: Acceptance, Commissioning and QA</td>
<td>MU Check: Commissioning of MU Check for photons and electrons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HDR program and TPS commissioning</td>
<td>Linac room design and shielding / Radiation area survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LDR program and TPS commissioning</td>
<td>Survey meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>SRS program and TPS commissioning</td>
<td>HDR, CT &amp; PET shielding and surveys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Daily QA / IMRT QA: Acceptance, Commissioning of Daily QA and IMRT QA</td>
<td>TomoTherapy Commissioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4DCT and gating: Acceptance, Commissioning and QA</td>
<td>Total Body Irradiation Commissioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>SRS program and TPS commissioning</td>
<td>Radiopharmaceuticals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Total Skin Electron commissioning</td>
<td>Personnel monitoring program / Sealed Source leak testing and inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>LINAC: Acceptance and Commissioning</td>
<td>State and federal radiation safety regulations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Gantry Dynamic IMRT: Acceptance and Commissioning for VMAT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Resident Evaluations (Oral Exams)

- All residents are evaluated by regular oral exams
  - Exams cover clinical rotations & all projects
  - Consortium sites participate via Skype
- Currently every four months
  - 2-2.5 hour exams cover clinical rotations and all projects
- Minimum of three faculty administer:
  - 1 from Resident’s home site, 2 from other Consortium sites
- All residents held to same performance standards regardless of location
  - Performance evaluated through standardized forms
  - Results & anonymous comments provided to and reviewed with residents by their program director or deputy director
Resident Oral Exam Evaluation Form

Assessment Scale
5 – Excellent: Knowledge of examination material is exceptional in all areas on a consistent basis; examination performance is considered superior.

4 – Above Expectations: Examination results exceed expectations; performance is of consistent high quality.

3 – Meets Expectations: Competent level of performance that consistently meets high standards.

2 – Needs Improvement: Performance, results, and/or consistency is below standards in certain areas. Improvement is needed.

1 – Unsatisfactory: Performance, results, and/or consistency is below standard in most/all areas. Immediate improvement is required that results in “Meets Expectation” rating within 60 days.

Topic: IMBT Q&A/THD

Mentor: 

Score: 5

Comments:

in-vivo, should read flowcurve & fading, should know i equation of paper by Pansky. Should know EOR preferred for IMBT Q&A. Should know relevant speeds of Th, X, EVA2 & typical dose to get Ω = 1.
Resident Evaluation (day-to-day)

- Each affiliate responsible for day-to-day training/evaluation
  - Measures taken to assure consistency between affiliates

- Resident progress tracking
  - Typhon Software Web-based Student Tracking (http://www.typhongroup.com)
  - Competency checklists, project reports, clinical observations, physician shadowing, etc.
  - Program director(s) & Deputy director have rights to view all residents

- Routine evaluations
  - Mentors evaluate residents on each topic covered
  - Residents evaluate mentors

- Other software may be available
Example:

**Competency Checklist**

<table>
<thead>
<tr>
<th>MINIMUM REQUIRED</th>
<th>ITEM [CATEGORY]</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 2nd or 1st</td>
<td>Review AAPM Report 38 [ADMIN, PROFESSIONAL AND TRAINING]</td>
</tr>
<tr>
<td>(1) 2nd or 1st</td>
<td>Review AAPM Report 80 [ADMIN, PROFESSIONAL AND TRAINING]</td>
</tr>
<tr>
<td>(1) 2nd or 1st</td>
<td>Review AAPM Report 90 [ADMIN, PROFESSIONAL AND TRAINING]</td>
</tr>
<tr>
<td>(1) 2nd or 1st</td>
<td>Review HIPAA compliance [ADMIN, PROFESSIONAL AND TRAINING]</td>
</tr>
<tr>
<td>(1) 2nd or 1st</td>
<td>Review TG-109 [ADMIN, PROFESSIONAL, AND TRAINING]</td>
</tr>
</tbody>
</table>

- Observe cylinder applicator insertion [BRACHY PLANNING/VERIFICATION/Delivery]
- Observe tandem and cylinder applicator insertion [BRACHY PLANNING/VERIFICATION/Delivery]
- Observe tandem and ovoids applicator insertion [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in documentation prep for MammomSite [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in documentation prep for T&O [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in documentation prep for tandem & cyl [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in documentation prep for vaginal cyl [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in image acquisition/fusion: CT-MRI [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in MammoSite planning [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in MammoSite treatment [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in prostate seed post-planning [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in prostate seed post-planning [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in tandem and cylinder planning [BRACHY PLANNING/VERIFICATION/Delivery]
- Participate in tandem and cylinder treatment [BRACHY PLANNING/VERIFICATION/Delivery]
**Example:**

### Project Mentor Evaluation of Resident

#### Month of Project
- **Select One**
- **Answer Required**

#### Year
- **Select One**
- **Answer Required**

#### Please enter the project for which you supervised the resident
- **Answer Required**

#### Resident's understanding of the covered materials and topics
- **Poor**
- **Fair**
- **Good**
- **Excellent**
- **Superior**
- Please add additional comments if desired:
- **Answer Required**

#### Resident's performance in completing the assignments in the project
- **Poor**
- **Fair**
- **Good**
- **Excellent**
- **Superior**
- Please add additional comments if desired:
- **Answer Required**

#### Please rate the resident's initiative in ensuring that all project objectives were met
- **Poor**
- **Fair**
- **Good**
- **Excellent**
- **Superior**
- Please add additional comments if desired:
- **Answer Required**

#### Please score the resident's performance on the project
- **Pass**
- **Conditional Pass**
- **Fail**
- **Answer Required**

#### If the resident received a "Conditional Pass" or "Fail" in the previous question, please describe why you selected that option and any additional tasks the resident must perform to satisfactorily complete the project objectives
Program Growth and Milestones
(Resident Enrollment)

- MBPCC Residents
- Affiliate Site Residents
- TotalResidents

Year
Residency Positions
0 1 2 3 4 5 6
7 8 9 10 11 12
Program Growth and Milestones
(Graduates & Current Residents)

• CAMPEP Accreditation 2012

• 15 graduates
  – Monica Moldovan, PhD    MBP   2011
  – Shima Ito, MS    MBP   2012
  – Gordon Mancuso, MS    Oncologics  2013
  – Jarron Syh, MS    WK   2013
  – Bijoy Adhikary, MS    MBP   2013
  – Thomas Brown, PhD    MBP   2014
  – Jeff Kemp, MS    MBP   2014
  – Neil Duggar, MS    UMMC  2014
  – Michael White, MS    WK   2014
  – Alex Nguyen, MS    UMMC  2014
  – Ryan Posey, MS    Oncologics  2014
  – Justin Silkwood, MS    MBP   2015
  – Jason Stanford, MS    UMMC  2015
  – Michele Zhang, Ph.D.    WK   2015
  – Diane Alvarez, MS    MBP   2015

• 10 active residents (5 at MBP, 3 at WK, 2 at UMMC)
## Program Accreditation Process

### CAMPEP Accreditation Timeline

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUL 2011</td>
<td>Application submitted to CAMPEP</td>
</tr>
<tr>
<td></td>
<td>- Initial self-study written for MBPCC only</td>
</tr>
<tr>
<td></td>
<td>- Subsequent discussions with CAMPEP encourage including all affiliate sites</td>
</tr>
<tr>
<td>OCT 2011</td>
<td>CAMPEP resubmission under new program director.</td>
</tr>
<tr>
<td>NOV 2011</td>
<td>Initial CAMPEP review received. Request additional materials from affiliate sites</td>
</tr>
<tr>
<td>FEB 2012</td>
<td>Response submitted to CAMPEP review</td>
</tr>
<tr>
<td>JUN 2012</td>
<td>CAMPEP site visit.</td>
</tr>
<tr>
<td>AUG 2012</td>
<td>Full accreditation (5-year) granted</td>
</tr>
</tbody>
</table>
Program Accreditation Process
CAMPEP Site Visit

• Site Visit (SV) Team:
  – 2 Physicists
  – 1 Physician

• Site Visit Duration 2.5 Days:
  – Day 1: All site visitors at MBPCC.
    • Meet with all faculty, physicians, administration, etc.
    • Skype conference with affiliate program directors
    • Face to face meeting with all six residents
  – Day 2: SV team splits up and visits 3 affiliate sites
    • Morning: Travel and ~3 hour visit at each site
    • Afternoon: SV team returns and writes draft report
  – Day 3: SV team reviews report with PD
Program Accreditation Process

CAMPEP Recommendations

- Resident Projects should be cohesive among the sites:
  - Project descriptions should be compared to ensure consistency across the Consortium.
  - Consideration should be given to developing a standard format for project reports.
  - Evaluation of written project reports should include an assessment by a Consortium staff member at a site other than that of the submitting resident.
Program Accreditation
CAMPEP Recommendations

• On-going efforts will be required to enhance and maintain the cohesion of the program:
  • A senior resident should be appointed to the Program Committee to provide input on resident issues.
  • Face to face resident meetings should be facilitated and supported ideally at a frequency of 2 per year.
  • Support for professional development of residents should be harmonized as much as possible.
Conclusions

• A hub-and-spoke model residency program has been successfully established with MBPCC and three affiliate sites in Louisiana and Mississippi.

• The hub-and-spoke model presents some challenges to ensure program consistency and uniformity of resident training.

• The hub and spoke model has offered more opportunities for resident training, with more residents, faculty and procedures than would be possible at a single site.
Thank you!
Imaging Physics Residency
Considerations for Hub and Spoke

Robert J. Pizzutiello, MS, FACR, FAAPM, FACMP
Residency Program Director, Upstate Medical Physics, PC
Senior Vice President, Imaging Physics
LANDAUERER Medical Physics

September 8, 2015
Outline

• Benefits of Hub and Spoke
• Brief History of UMP Residency (a private practice group)
• What does CAMPEP have to say?
  – CAMPEP Policies and Procedures
  – CAMPEP Standards
• Challenges for Hub and Spoke
  – Finding the right partner
  – Compliance and Accountability
• Financial Analysis and Negotiations
  – A more cost effective solution
• Summary
What is a “Hub and Spoke” Residency?
What is a “Hub and Spoke” Residency?

• The Hub (Mothership)
  – May be an existing program
  – Could be a new program
  – Academic or private practice
  – Expertise in Imaging Physics
  – Home Base of Program Director

• A Spoke (Remote or satellite) site
  – Academic or private practice
  – Expanded experience or geography for residents (Imaging)
  – Extended experience, e.g., Nuclear Medicine Physics or Special Procedures
  – May be more than one…..
Benefits of Hub and Spoke

- For the Spoke (Remote or satellite) site
  - No need to reinvent the wheel
  - Benefits of residency without administrative overhead
  - Collaboration with more experienced faculty and larger institution (more varied environment)

- For the Hub (Mothership)
  - Leverage investment in systems and people
  - Build/strengthen relationships with other sites

- For the resident
  - More varied opportunities, move available slots

- For the profession
  - More residency positions
Outline

• Benefits of Hub and Spoke
• Brief History of UMP Residency (a private practice group)
• What does CAMPEP have to say?
  – CAMPEP Policies and Procedures
  – CAMPEP Standards
• Challenges for Hub and Spoke
  – Finding the right partner
  – Compliance and Accountability
• Financial Analysis and Negotiations
  – A more cost effective solution
• Summary
UMP Residency History

- 1989 RJP solo FTE
- 1990 2.5 FTE
- 2000 6 FTE
- Growth creates need for more MP’s
  - recruitment is tough and costly (time and $)
- New paradigm emerges in 2005-06
  - Joel Gray suggested Dustin Gress, MS student
  - Steve Rudin suggested Mark Wu, Ph.D student
- Convert OJT to Residency Program (more structure)
- UMP residency accredited 2010
- To date, 6 residents graduated + 3 currently enrolled
Residency in Private Practice Group

- Office plus field work at different client sites
  - Office based ~ 2 days/week
    - Meetings, Journal Clubs, prep and review reports
  - Field work ~ 3 days per week
    - Drive time plus work at client sites
  - Two offices: Victor and Buffalo, NY
- Residents apprentice with senior MP’s
  - Preparation
  - Field work
  - Reports
  - Review
- Unlike a true Hub and Spoke
  - Residents and staff all UMP employees
  - Common meetings, office space, emails, server, P&P, etc.
Residency in Private Practice Group

- UMP offers no courses
- Residents work under NY License
  - Limited permit
  - Direct supervision for scope of practice work
  - General supervision for data collection, after demonstrating competency and faculty signoff
  - All reports signed by licensed MP

- MQSA
  - 20 surveys under supervision, N. Carolina approval and FDA letter until completion of ABR Part III.
Residency in Private Practice Group

• After demonstrating competency in modality, resident begins to perform independent field work (data collection)
  – Maintain skills
  – Stay sharp for ABR
  – Contribute to the practice
  – First example: survey of traditional “portables”, no IR
  – Reports reviewed by faculty (Direct or personal supervision)

• When resident leaves, they should be competent, with recent experience in all modalities
  – Prep for real world jobs
Residency in Private Practice Group

- Hands-on field work is performed at more than 150 facilities in 5 states
- Eventually, residents do independent field work, after demonstrated competency (RPS, portables, C-arms, CR, Mammo, etc.)
- **Progression from Personal to Direct Supervision** by UMP faculty with independent data collection
Outline

• Benefits of Hub and Spoke
• Brief History of UMP Residency (a private practice group)
• What does CAMPEP have to say?
  – CAMPEP Policies and Procedures
  – CAMPEP Standards
• Challenges for Hub and Spoke
  – Finding the right partner
  – Compliance and Accountability
• Financial Analysis and Negotiations
  – A more cost effective solution
• Summary
Section G: Residency Program Accreditation

G.01: Standards for Accreditation
G.02: Application Process
G.03: Program Evaluation Process
G.04: Program Site Visit
G.05: Affiliate Sites

http://www.campep.org/CAMPEPP&Ps.pdf
Imaging physics residencies may add an additional (third) year offering education in nuclear medicine physics and nuclear medicine physics residencies may add an additional year offering education in imaging physics. Such three-year residency programs will be considered for accreditation.

The accreditation fee for such a combined program is $6000, unless a program adds a nuclear medicine option to an existing diagnostic imaging residency, or vice versa, in which case the fee for the additional accreditation is $5000.
Section G: Residency Program Accreditation

G.05: Affiliate Sites

Policy No. G.05, Rev 1 Created: 01 Aug 2012 Approved: April 2014

Policy: Medical Physics Residency Education Programs encompassing affiliate sites (a.k.a hub and spoke programs) shall ensure that uniform standards and procedures are maintained across all participating facilities.

Procedure:
.01 The primary site (hub) of a Program encompassing affiliate sites (spokes) is the organization employing the Program Director.
.02 An affiliate site is a participating site but under separate governance and budget than the primary site.
.03 All correspondence between CAMPEP and the Program shall be through the Program Director at the primary site.
.04 The Program Director is ultimately responsible for ensuring compliance of the Program, as implemented at all participating sites, with CAMPEP requirements.
.05 Affiliate sites must appoint **Associate Program Directors** who are accountable to the Program Director for, among other things, ensuring compliance with the Residency Education Program as submitted in the Self Study and accredited by CAMPEP.

.06 All records related to the operation of the Program at all sites must be accessible by the Program Director either electronically or in hard copy.

.07 Applications for accreditation from Programs encompassing affiliate sites must include the following:

  i. An official letter from the Program Director’s institution confirming the participation of the named affiliates.
  
  ii. A clear, preferably graphical, description of the organizational structure of the program, primary and affiliate sites, with explicit lines of accountability.
  
  iii. Official letters from all affiliate sites requesting CAMPEP accreditation of the Program.
  
  iv. Letters of agreement between the affiliate sites and the primary site describing liability, responsibility, accountability and any financial arrangements.
.08 Applications for accreditation from Programs encompassing affiliate sites must include a letter from each Associate Program Director confirming that:

i. The expectations for successful completion of the Program are entirely consistent with those submitted in the Program’s Self Study.

ii. Remedial activities for residents not meeting expectations are entirely consistent with those submitted in the Program’s Self Study.

iii. All documentation, particularly including evaluations of and by the residents, across all sites is consistent with that submitted in the Program’s Self Study.

iv. The Program Director is acknowledged as having ultimate responsibility for the accreditation status of the Program.

.09 The Self Study must explicitly address communication within the Program including the frequency, format, i.e. videoconference, etc, and membership of Program meetings.
Additional Expectations for Affiliate Programs

.13 If new sites are to be added to an existing accredited program, the material associated with the new site will have to be reviewed by CAMPEP before residents graduating from the new site will be considered to be from an accredited program. This may include a site visit to the new site. The site to be added will need to have all of the associated structure and documentation described above.

.14 Additional fees will be assessed by CAMPEP for conducting affiliate site reviews. The amount of these fees will be based on the amount of time, distance, and complexity associated with the review.

.15 All efforts should be taken to make the residents at all affiliated sites feel as though they are part of one coordinated program. This may be difficult to accomplish but in-person and internet based means of having the residents interact on their presentations and reports may offer a way to accomplish this goal.

http://www.campec.org/CAMPEPP&Ps.pdf
.13 If new sites are to be added to an existing accredited program, the material associated with the new site will have to be reviewed by CAMPEP before residents graduating from the new site will be considered to be from an accredited program. This may include a site visit to the new site. The site to be added will need to have all of the associated structure and documentation described above.

.14 Additional fees will be assessed by CAMPEP for conducting affiliate site reviews. The amount of these fees will be based on the amount of time, distance, and complexity associated with the review.

.15 All efforts should be taken to make the residents at all affiliated sites feel as though they are part of one coordinated program. This may be difficult to accomplish but in-person and internet based means of having the residents interact on their presentations and reports may offer a way to accomplish this goal.

http://www.campep.org/CAMPEPP&Ps.pdf
CAMPEP Standards, Rev July 2015

1. Program Goal and Objectives
2. Program Structure and Governance
3. Program Director
4. Program Staff
5. Institutional Support
6. Educational Environment
7. Scholarly Activities
8. Residency Curriculum

http://www.campep.org/ResidencyStandards.pdf
2. Program Structure and Governance

2.5. Resident education shall be supervised and monitored by an appropriate steering committee, which meets at least twice per year.

Committee membership shall include but not be limited to the program director and relevant staff involved in residency education. A physician member is recommended. The process for appointment of the members of the steering committee shall be documented. A pathway for expression of resident concerns to the committee shall be available. Minutes of meetings shall be maintained.
2. Program Structure and Governance

2.9. A program may consist of a single institution or multiple affiliated institutions (hub-and-spoke). Programs consisting of affiliated institutions must meet the requirements for affiliated programs described in the CAMPEP Policies and Procedures.

http://www.campep.org/ResidencyStandards.pdf
3.1. **A single Program Director (PD)** shall be responsible and accountable for ensuring that the residency program satisfies CAMPEP standards, and shall ensure that quality education occurs at all training sites and for all residents.

3.2. The PD must be certified by the American Board of Radiology, the Canadian College of Physicists in Medicine, or other appropriate certifying agency in the field of the residency program.

3.3. The PD shall have at least five years of full-time experience beyond clinical certification.

3.4. The PD shall be responsible for coordinating the faculty, recruiting residents into the program, advising the residents, and evaluating and promoting the program.

http://www.campep.org/ResidencyStandards.pdf
3.5. The PD shall determine that each student offered entry into the residency program satisfies the CAMPEP prerequisites for residency education in medical physics or is offered rigorous remedial education to meet the prerequisites.

3.6. The PD shall ensure that all student statistics, annual reports, and other information required by CAMPEP are reported accurately and in a timely fashion.

3.7. The process for the appointment of the PD shall be documented.

3.8. The PD shall meet periodically with each resident to assess the resident’s progress, and minutes of the meeting shall be maintained, with a copy provided to the resident.

3.9. The PD shall document any prior education from another institution (other than an accredited graduate or certificate program) that is used to satisfy educational prerequisites or requirements of the residency program.

http://www.campep.org/ResidencyStandards.pdf
4. Program Staff

4.4 At least two certified physicists shall be engaged in the residency educational program, and the ratio of full-time staff to residents in the program shall be at least 1:1.
5. Institutional Support

5.1. The institution sponsoring the residency program shall provide administrative support, including clinical and educational resources, budget, resident office or cubicle space, access to computing resources, conference room(s), audiovisual facilities, and office support (e.g. copiers, internet access, email account, telephone).

5.2. The institution must express its commitment to long-term financial and administrative support of the residency program.

5.3. Financial support of residents, including benefits, shall be described clearly to prospective applicants prior to their entry into the residency program.

5.4. Entering residents shall be provided both a verbal and written orientation to their role in the program to ensure their efficient and safe integration into the program.

5.5. The program shall instruct its residents on the potential hazards that they might encounter and the appropriate measures for them to take to minimize risks to themselves and equipment.

http://www.campep.org/ResidencyStandards.pdf
Section E: General Accreditation Policies

E.01: Objectives
E.02: Scope of Activity
E.03: Application Process
E.04: Review Process
E.05: Site Visit
E.06: Accreditation Status
E.07: Reaccreditation
E.08: Communication with Applicants
E.10: Conflicts between Commission and Laws
E.11: International Accreditation
E.12: Process for Appeals
E.13: Process for Appeal Hearing

http://www.campep.org/ResidencyStandards.pdf
.01 When a site visit is scheduled, the expectations shall be communicated to the program director by the lead reviewer to enable appropriate arrangements to be made.

.02 The site visit shall be of 1-2 days duration and will be scheduled in collaboration with the program director at a time to maximize the ability of the program reviewers to interview all program participants.

.03 The program director shall be asked to arrange a room suitable for the review team to conduct interviews.
The schedule shall include:

a. Interviews with all faculty, individually if time permits, starting with the program director.
b. A brief tour of the facilities.
c. A review of all documentation pertaining to the operation of the program.
d. A session with the students/residents.
e. Interviews with all relevant program administrators and institution management, preferably towards the end of the visit to allow appropriate feedback.
f. Time-permitting, a discussion period for the review team to prepare an outline of the report.
g. An exit interview with the program director for the review team to verbally communicate the essential findings of the review.

http://www.campep.org/ResidencyStandards.pdf
<table>
<thead>
<tr>
<th>Institution</th>
<th>Initial Accreditation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mary Bird Perkins Cancer Center</strong></td>
<td>(Initial Accreditation 2012)</td>
</tr>
<tr>
<td>Radiation Oncology Physics Residency Training Program</td>
<td></td>
</tr>
<tr>
<td>4950 Essen Lane</td>
<td></td>
</tr>
<tr>
<td>Baton Rouge, LA 70809</td>
<td></td>
</tr>
<tr>
<td>Program Director: Jonas D. Fontenot, Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Tel: 225-215-1337 / Fax: 225-215-1376</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:jfontenot@marybird.com">jfontenot@marybird.com</a></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.phys.lsu.edu/newwebsite/graduate/medphys_briefhistory.html">http://www.phys.lsu.edu/newwebsite/graduate/medphys_briefhistory.html</a></td>
<td></td>
</tr>
</tbody>
</table>

Affiliated Programs:

- Willis-Knighton Cancer Center
- Medical Physics Residency Program
  2600 Kings Highway
  Shreveport, LA 71103
- Program Director: Hsinshun Terry Wu, Ph.D.
  Tel: 318-212-4639 / Fax: 318-212-8305
  [twu@wkhs.com](mailto:twu@wkhs.com)

- University of Mississippi Medical Center
  Radiation Oncology Physics Residency Training Program
  350 West Woodrow Wilson Drive, Suite 1600
  Jackson, MS 39213
  Program Director: Chunli Yang (aka Claus), Ph.D., DABR
  Tel: 601-815-7562 / Fax: 601-815-6876
  [cyang@umc.edu](mailto:cyang@umc.edu)

- Oncologics, Inc.
  Medical Physics Residency Program
  917 General Mouton Avenue
  Lafayette, LA 70501
  Program Director: John Duohon, MS
  Tel: 337-237-2057 / Fax: 337-264-1029
  [jduohon@oncologics.net](mailto:jduohon@oncologics.net)
Outline

• Benefits of Hub and Spoke
• Brief History of UMP Residency (a private practice group)
• What does CAMPEP have to say?
  – CAMPEP Policies and Procedures
  – CAMPEP Standards
• Challenges for Hub and Spoke
  – Finding the right partner
  – Compliance and Accountability
• Financial Analysis and Negotiations
  – A more cost effective solution
• Summary
Challenges for Hub and Spoke Programs

• Program Director is responsible for “compliance” with Self Study at all locations

• Finding the right Remote Partner is key!

• Remote Site must be interested in training as well as clinical practice
  • Time and financial commitment
  • Balance personal supervision – independence
  • Office vs. Home/Automobile based

• Personal and institutional commitment
• Reputation is at stake
Suggestions to consider:

- Processes for remote tracking, reporting and accountability
- Web-based or home grown cloud-based
- Review self-study, identify key elements
  - Typhon or other tools
- P&P Manual, specifies Associate Program Director (Remote site), or Mentor responsibilities
- Contract between Hub and Spoke sites
Suggestions to consider:

- Quarterly review of documentation
- Associate Program Director join Quarterly Residency Committee meetings (Skype or T-con)
- Quarterly Resident Reviews
  - PD initially observe or Skype
  - Then review results
- Annual oral exam team – core + remote
- May delegate data collection to Ed Coordinator; PD retains responsibility
<table>
<thead>
<tr>
<th>Month</th>
<th>Article #</th>
<th>Modality</th>
<th>Article Title</th>
<th>Typhon?</th>
<th>Faculty Reviewed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>1 - Res</td>
<td>Radiography/Fluoroscopy</td>
<td>The Physics of Computed Radiography (Keri)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>2 - Rad</td>
<td></td>
<td>Urgent and Emergent Imaging (Dr. O'Connor)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>3 - AAPM CE</td>
<td>Mammography</td>
<td>Final MQSA Rules</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>Mortality in British and US Radiologists (British Journal of Radiology)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>May</td>
<td>1 - Res</td>
<td>Computed Tomography</td>
<td>CT Dose (Rhett)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>2 - Rad</td>
<td></td>
<td>Obese Patient (Dr. Kurland)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>3 - AAPM CE</td>
<td>Mammography</td>
<td>Advances in Breast Imaging</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Mammography</td>
<td>Improved detection in mammo using CAD</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>June</td>
<td>1 - Res</td>
<td>Mammography</td>
<td>Mammography Generators (Keri)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>2 - Rad</td>
<td></td>
<td>Invasive Lobular Carcinoma (Dr. Lorenzetti)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>3 - AAPM CE</td>
<td></td>
<td>ABR Exam Update</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Mammography</td>
<td>Quality Assurance in Mammography Artifacts</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
Upstate Medical Physics (Act #9851)
Case ID #: 1151-20130207-001

Student Information
- Semester: Q3 third qtr
- Course: Field Work
- Mentor: PIZZUTELLO, Robert (Program Director)
- Clinical Site: Mercy Hospital

Patient Demographics
- Group Encounter

Clinical Information
- Time with Patient: 60 minutes
- Consult with Mentor: minutes (not part of patient time)

Other Questions About This Case
- Resident Participation: 3 Primary
- Equipment Manufacturer: AGFA
- Clinical Setting: 2 Field
- Travel Time-total: 0 minutes
- Other: 

Procedures/Skills (Observed/Assisted)
- Survey
  - Oos Asst Perf (Critical in RED)
  - CR
  - CT-MDCT, Flat Panel
  - Dental
  - Display and Printing Devices: DICOM GSDF, QC
  - Mammography-FFDM, SFM, SBB
  - MR- 1.5, 3.0, Open
  - Nuclear Medicine
  - Radiation Protection Survey
  - RF- fixed, portable, or DR
  - Special Procedures Cardiac Cath
  - Ultrasound-abdomen, breast, vascular
- Admin and Professional Duties
- Shielding Design and Calculations
- Patient Dosimetry
- Technology Management
- Image Quality Assessment
- Radiation Safety
- Radiation Safety Committee Meetings
- Presentations
- Other: explain in notes section

Clinical Notes:
- Performed an annual survey on AGFA CR.

Encounter Continuity
- Save this case, then COPY/JOIN data into a new encounter
- Save this case and view/edit linked cases:
### PROCEDURES/SKILLS TOTALS

Displays how many times you have marked a procedure/skill as Observed, Assisted, or Performed. The minimum requirements are optionally entered by the administrator. Items with minimums will appear in red if the minimum has not been met, and will turn to blue once the minimum is met.

<table>
<thead>
<tr>
<th>OBSERVED</th>
<th>ASSISTED</th>
<th>PERFORMED</th>
<th>MINIMUM REQUIRED</th>
<th>ITEM [CATEGORY]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Acceptance and Commissioning of Imaging Equipment [TECHNOLOGY MANAGEMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Accidental or Unintended Exposure [RADIATION SAFETY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Assessments/ Evaluations [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Assessment of digital, patient images [IMAGE QUALITY ASSESSMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Assessment through objective tests [IMAGE QUALITY ASSESSMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Assessment with phantoms [IMAGE QUALITY ASSESSMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Board Review Course [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>4</td>
<td></td>
<td>Calibration [RADIATION SAFETY]</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td>Client Staff Professional, Allied Professional [PRESENTATIONS]</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>7</td>
<td></td>
<td>Computed Tomography [SHIELDING DESIGN AND CALCULATIONS]</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>17</td>
<td></td>
<td>Continuing Education Programs [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>CR [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>CT MDCT, Flat Panel [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Dental [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Display and Printing Devices : DICOM, GEDF, QC [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
<td>Effective Dose [PATIENT DOSIMETRY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>ESE [PATIENT DOSIMETRY]</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
<td>Imaging Informatics [TECHNOLOGY MANAGEMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Instrumentation [RADIATION SAFETY]</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>0</td>
<td></td>
<td>Interventional [SHIELDING DESIGN AND CALCULATIONS]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Large Community Hospitals [ &gt; 300 beds] [RADIATION SAFETY COMMITTEE MEETINGS]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Life Cycle of Imaging Equipment [TECHNOLOGY MANAGEMENT]</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>21</td>
<td></td>
<td>Mammography-FDM, SPM, SIB [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Management of routine QC testing [TECHNOLOGY MANAGEMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>MRI 1.5, 3.0 Open [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>MRI Shielding [RADIATION SAFETY]</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>0</td>
<td></td>
<td>Nuclear Medicine [SURVEY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Organ Dose, implanted medical devices [PATIENT DOSIMETRY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Orientation - HIPPA [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Orientation - Immunizations, TB Test [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Orientation - Physical Facility [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Orientation - scope of clinical facilities [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
<td>Orientation to Typhon [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Overview of Library, available resources [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Personal Monitoring Rd, TLD, DSI [RADIATION SAFETY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>PET [SHIELDING DESIGN AND CALCULATIONS]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Physical Design: Private Practice, Hospital Dept [TECHNOLOGY MANAGEMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Private Practice [RADIATION SAFETY COMMITTEE MEETINGS]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>PTO [ADMIN AND PROFESSIONAL DUTIES]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Quality Management Systems [TECHNOLOGY MANAGEMENT]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Rad [RING DESIGN AND CALCULATIONS]</td>
</tr>
<tr>
<td>0</td>
<td>11</td>
<td>0</td>
<td></td>
<td>Radiative Materials [RADIATION SAFETY]</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Radiographic and Fluoroscopic [SHIELDING DESIGN AND CALCULATIONS]</td>
</tr>
</tbody>
</table>
## Progress towards “Minimum Required”

<table>
<thead>
<tr>
<th>ITEM [CATEGORY]</th>
<th>OBSERVED</th>
<th>ASSISTED</th>
<th>PERFORMED</th>
<th>MINIMUM REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance and Commissioning of Imaging Equipment [TECHNOLOGY MANAGEMENT]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10 Asst or Perf</td>
</tr>
<tr>
<td>Accidental or Unintended Exposure [RADIATION SAFETY]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Assessments/Evaluations [ADMIN AND PROFESSIONAL DUTIES]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Assessment of clinical, patient images [IMAGE QUALITY ASSESSMENT]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Assessment through objective tests [IMAGE QUALITY ASSESSMENT]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Assessment with phantoms [IMAGE QUALITY ASSESSMENT]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Board Review Course [ADMIN AND PROFESSIONAL DUTIES]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Calibration [RADIATION SAFETY]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Client Staff- Professional, Allied Professional [PRESENTATIONS]</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Computed Tomography [SHIELDING DESIGN AND CALCULATIONS]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Continuing Education Programs [ADMIN AND PROFESSIONAL DUTIES]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>CR [SURVEY]</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CT-MDCT, Flat Panel [SURVEY]</td>
<td>19</td>
<td>7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Dental [SURVEY]</td>
<td>2</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Display and Printing Devices- DICOM GSDF, QC [SURVEY]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Effective Dose [PATIENT DOSIMETRY]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ESE [PATIENT DOSIMETRY]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Fetal [PATIENT DOSIMETRY]</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Imaging Informatics [TECHNOLOGY MANAGEMENT]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Instrumentation [RADIATION SAFETY]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Interventional [SHIELDING DESIGN AND CALCULATIONS]</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Intermountain Community Hospital (&gt;300 beds) [RADIATION SAFETY COMMITTEE MD]</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Progress towards competency goals

<table>
<thead>
<tr>
<th>Date</th>
<th>Case ID #</th>
<th>Case Created (TT)</th>
<th>Last Edited (TT)</th>
<th>Semester</th>
<th>Course</th>
<th>Clinical Site</th>
<th>Mentor</th>
<th>Student</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/22/2012</td>
<td>1153-20120928-001</td>
<td>10/5/2012 9:45:20 AM</td>
<td>10/5/2012 9:49:01 AM</td>
<td>Q3 third qtr</td>
<td>Field Work</td>
<td>St. Elizabeth Medical Center</td>
<td>JEWELL, Nelson</td>
<td>Blake, Victoria</td>
<td>Pending</td>
</tr>
<tr>
<td>8/24/2012</td>
<td>1153-20120934-001</td>
<td>10/5/2012 2:00:37 AM</td>
<td>10/5/2012 2:02:56 AM</td>
<td>Q3 third qtr</td>
<td>Field Work</td>
<td>Niagara Falls Memorial Medical Ctr</td>
<td>Peltel, Villas</td>
<td>Blake, Victoria</td>
<td>Pending</td>
</tr>
<tr>
<td>8/22/2012</td>
<td>1153-20120935-001</td>
<td>10/5/2012 2:58:58 PM</td>
<td>10/5/2012 3:00:49 PM</td>
<td>Q3 third qtr</td>
<td>Field Work</td>
<td>Unity Health System</td>
<td>MARMAT, Robert</td>
<td>Blake, Victoria</td>
<td>Pending</td>
</tr>
<tr>
<td>8/20/2012</td>
<td>1153-20120936-001</td>
<td>10/5/2012 10:04:25 AM</td>
<td>10/5/2012 10:05:47 AM</td>
<td>Q3 third qtr</td>
<td>Field Work</td>
<td>Newark-Wayne Community Hospital</td>
<td>MARMAT, Robert</td>
<td>Blake, Victoria</td>
<td>Pending</td>
</tr>
<tr>
<td>8/10/2012</td>
<td>1153-20120941-001</td>
<td>10/5/2012 10:35:35 AM</td>
<td>10/5/2012 10:36:32 AM</td>
<td>Q3 third qtr</td>
<td>Field Work</td>
<td>Anatomy - Physiology</td>
<td>PIzzutillo, Isabelle</td>
<td>Blake, Victoria</td>
<td>Pending</td>
</tr>
</tbody>
</table>
Outline

• Benefits of Hub and Spoke
• Brief History of UMP Residency (a private practice group)
• What does CAMPEP have to say?
  – CAMPEP Policies and Procedures
  – CAMPEP Standards
• Challenges for Hub and Spoke
  – Finding the right partner
  – Compliance and Accountability
• Financial Analysis and Negotiations
  – A more cost effective solution
• Summary
Financial and Negotiation Issues

- Mutual benefit and interest
- Protection of all parties, including residents!
- Here are a few highlights
- Details in the Webinar Part III....
Financial Overview

- **Fixed Program Costs, shared**
  - Includes clinical teaching, Residency Coordinator
- **Equipment Costs, per resident**
  - Each resident needs their own
- **Travel costs**
  - Driver’s license
  - Each resident needs their own car and costs, because they begin to drive and do field work independently
Contract elements

- Identify roles and responsibilities
  - P&P Manual (participate in Journal Clubs)
  - Employee relationship (salary, taxes, benefits)
  - Professional and general liability
  - Communication, reports, on-site visits by PD
- Financial responsibilities
- Institutional (corporate) commitment, term
- Back-up Site Mentor
- Worst case scenarios
  - Disputes, resolution, termination
  - Protect the Resident, Accredited Residency
Review

• Benefits of Hub and Spoke
• Brief History of UMP Residency (a private practice group)
• What does CAMPEP have to say?
  – CAMPEP Policies and Procedures
  – CAMPEP Standards
• Challenges for Hub and Spoke
  – Finding the right partner
  – Compliance and Accountability
• Financial Analysis and Negotiations
  – A more cost effective solution
• Summary
Conclusions

- A Hub and Spoke residency program can be effective, mutually beneficial and financially sustainable, provided that the program has sufficient
  - Planning to meet CAMPEP requirements
  - Organizational (financial) commitment
  - Operational Systems (Policies and Procedures, Committee…)
  - Faculty and staff committed to training Residents
  - Work to provide experience and financial strength

- Critical to Success
  - The right Hub-Spoke partner
  - A well conceived process: Compliance and Accountability
  - Financial and Negotiations, to be addressed in Webinar Part III
Hub and Spoke Webinar #1:
General Structure, Basics & Responsibilities
from a Main Site Perspective

Question/Answer Session

- To send questions to the speaker, please enter them into the question box in the Go-To-Meeting toolbar.
## Hub and Spoke Webinar Series

<table>
<thead>
<tr>
<th>Webinar Title</th>
<th>Speakers</th>
<th>Date/Time</th>
</tr>
</thead>
</table>
| **Webinar #1 - General Structure, Basics & Responsibilities from a Main Site Perspective** | Joseph Dugas, PhD  
Mary Bird Perkins Cancer Center  
Robert Pizzutiello Jr., MS  
Landauer Medical Physics | Tuesday, Sept 8, 2015  
12 – 1 pm, eastern                                                    |
| **Webinar #2 - Motivation, Economics, and Structure from the Satellite Perspective** | Firas Mourtada, PhD, Christiana Care Hospital  
Michele Verst, MS  
Cancer Care Group | Monday, Sept 21, 2015  
11am – 12 pm, eastern                                               |
| **Webinar #3 - Economics and Negotiations**                                   | Firas Mourtada, PhD, Christiana Care Hospital  
12 – 1 pm, eastern                                                   |
| **Webinar #4 - CAMPEP Perspective**                                          | Chester Reft, PhD, University of Chicago  
John Antolak, PhD, Mayo Clinic | Thursday, Oct 15, 2015  
1 – 2 pm, eastern                                                   |