

# MedPhys Match Update

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# Acknowledgements

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Why do we need a match program?

# Resident Recruitment

## National Statistics

- Accredited Residency Programs (3/8/15):
  - Therapy – 79 approved, 3 in process, 2 incomplete (~126 residents)
  - Imaging – 11 approved, 2 in process, 6 incomplete (~29 residents)
  - DMP – 1 approved, 1 in process
- Goals to meet staffing needs:
  - Therapy 125-150 residents/year;
  - Imaging 25-30 residents/year.

# Resident Recruitment National Statistics

## Common Application Program (CAP)



The American Association of Physicists in Medicine

We advance the science, education and professional practice of medical physics

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### Residency Common Application (CAP)

We advance the science,  
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professional practice of  
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### CAP FAQ for Programs (updated 11/20/2013)

#### ▼ What is the CAP?

The CAP (Common Application Program, or Common Application Process) is a program started by the Workgroup for Coordination of Medical Physics Residency Programs (WGCMPR) to do three things.

- Make it easier for applicants to apply for residency programs.
- Reduce administrative burden for residency programs that have to process these applications.
- Provide a mechanism that will allow programs to work towards a match system, putting applicants in their preferred programs, and getting preferred applicants into participating programs. The match system is currently used by medical residents, but is not currently in place for physics residents.

#### ▶ What are the browser requirements?

▶ I am an AAPM member. Can I just use my AAPM login information for the CAP?

▶ I am already registered in the CAP. Do I have to register again?

▶ I registered but did not receive my activation email. Can you help me?

▶ How do I get my program listed in the CAP?

▶ I placed my ad on the AAPM careers site. Why is my program not listed in the CAP?

▶ I have registered as an institution and paid the fee. Is there anything else I need to do?

▶ How can I get a receipt for my payment?

# Resident Recruitment CAP Statistics (2013)

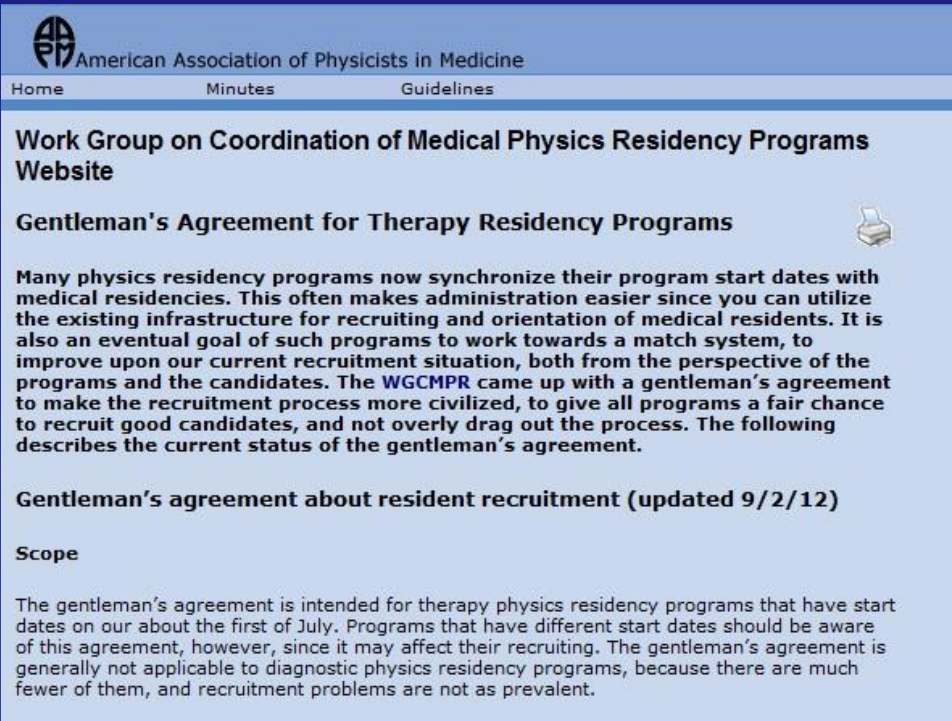
- **Institutions: 37 Programs with 46 Positions**
  - 35 therapy programs received 57 – 157 applicants
  - 12 therapy programs required PhD. All others MS or PhD
  - 15 programs required CAMPEP degree
  - 2 imaging programs got ~50 applicants, with no more than 5 of those applied only for imaging
- **Applicants: 275 unique applicants**
  - Number of applications ranged from 1 – 37. (3 applied for all 37 positions)
  - Total of 3642 applications.

# AAPM Gentleman's Agreement

## • 2013 Statement:

- No app deadlines before 12/1/13
- No offer deadlines before 2/17/14

<http://www.aapm.org/org/committees/committee/article.asp?id=3340>



The screenshot shows the AAPM website header with the logo and navigation links: Home, Minutes, and Guidelines. The main content area is titled 'Work Group on Coordination of Medical Physics Residency Programs Website' and 'Gentleman's Agreement for Therapy Residency Programs'. The text explains that many physics residency programs now synchronize their start dates with medical residencies, making administration easier. It mentions that the WGCMR came up with a gentleman's agreement to make the recruitment process more civilized and to give all programs a fair chance to recruit good candidates. The agreement is updated 9/2/12. The 'Scope' section states that the agreement is intended for therapy physics residency programs that have start dates on or about the first of July, and is generally not applicable to diagnostic physics residency programs.

**AAPM** American Association of Physicists in Medicine

Home Minutes Guidelines

### Work Group on Coordination of Medical Physics Residency Programs Website

#### Gentleman's Agreement for Therapy Residency Programs

Many physics residency programs now synchronize their program start dates with medical residencies. This often makes administration easier since you can utilize the existing infrastructure for recruiting and orientation of medical residents. It is also an eventual goal of such programs to work towards a match system, to improve upon our current recruitment situation, both from the perspective of the programs and the candidates. The WGCMR came up with a gentleman's agreement to make the recruitment process more civilized, to give all programs a fair chance to recruit good candidates, and not overly drag out the process. The following describes the current status of the gentleman's agreement.

**Gentleman's agreement about resident recruitment (updated 9/2/12)**

#### Scope

The gentleman's agreement is intended for therapy physics residency programs that have start dates on or about the first of July. Programs that have different start dates should be aware of this agreement, however, since it may affect their recruiting. The gentleman's agreement is generally not applicable to diagnostic physics residency programs, because there are much fewer of them, and recruitment problems are not as prevalent.

# Gentleman's "Disagreement"

- Programs wishing to obtain top applicants make early offers.
  - Because the applicant/residency slot  $\gg 1$ , students accept less-desirable positions.
  - Over time, more programs violating agreement and extending early offers
- Unfair to applicants
- Unfair to programs
  - Lose desired applicants
  - Recruitment logistics difficult



# Possible Solution: National Medical Physics Match Program

- Establish National Match Program which parallels the NRMP for physicians.
- Algorithm is simple, and can be implemented using data from the AAPM CAP system.
- July 2013 – AAPM WGCMR voted to implement match system, after obtaining legal opinion
- Sept 2013 – AAPM's legal council advised against running program through AAPM; recommended using NRMP.

# National Residency Match Program

<http://www.nmrp.org>

- Established 1952
- Independent Org.
- 2012 Match Data
  - 4400 Programs with 27000 positions
  - 38,000 Applicants
    - 17,000 U.S. 2012 Med Student Grads
    - 21,000 “Independent” applicants
- Matches Physicians only
- NRMP recommended using National Matching Services, Inc.



The image shows a screenshot of the NRMP website. At the top, there is a navigation menu with two options: "Main Residency Match™" and "Specialties Matching Service™", each with a corresponding colored square icon. Below the menu is a banner image featuring a DNA double helix and a hand holding a microscope. The NRMP logo is prominently displayed on the left side of the banner.

The National Resident Matching Program (NRMP) is a private, not-for-profit corporation established in 1952 to provide a uniform date of appointment to positions in graduate medical education (GME) in the United States.

**New>NRMP Communications News - Press & Media Relations**

Click on the links below to read about the latest NRMP news:

# National Matching Services, Inc.

- 35 year history of matching
- Match large variety of groups (100 – 25000 applicants)



National Matching Services Inc.

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## About Us

National Matching Services Inc. (NMS) specializes in the development and administration of Matching Programs. NMS was founded in 1985, after developing sophisticated matching algorithms and software for the placement of physicians into residencies in the US. Since then, we have implemented Matching Programs in a number of industries and professions, including health, education and law. [Read more about Matching Programs.](#)

## Roth-Peranson Algorithm

# National Medical Physics Match

## Recent Developments

- October 2013 – May 2014 AAPM/SDAMPP Joint Committee worked with NMS to develop MedPhys Match run by NMS.
- July 2014 – AAPM Board of Directors voted to support MedPhys Match
  - Agreed to endorse match
  - Financially subsidized MedPhys Match by paying 100% of program and applicant costs for two years.

# MedPhys Match – Schedule of Dates (2014/2015)

<b>Aug – Sep</b>	Program registration
<b>Oct. 1</b>	List of Participating Programs goes live
<b>Dec. 1</b>	Recommended deadline for applicant registration
<b>Feb. 18</b>	Rankings instructions distributed online and by email
<b>Mar. 4</b>	Online rankings system opens
<b>Mar. 20</b>	Rank Order List deadline
<b>Mar. 27</b>	Results released online and by email
<b>Mar. 27 – Apr. 26</b>	Letters of confirmation signed

# MedPhys Match – Residency Start Dates

- Most positions (>95%) start in the June 15-July 15 timeframe.
- MedPhys Match is intended for positions that begin from June 1, 2015 – December 31, 2015
- Programs offering positions in the January – May timeframe would require programs and applicants to commit at least 9 months prior to the starting date.
- Programs may offer these positions through MedPhys Match, but must make the start date clear on the Agreement.

How does the match program work?

# Match Algorithm

The 2012 Nobel Prize in economics went to Alvin E. Roth and Lloyd S. Shapley "for the theory of stable allocations and the practice of market design"





# Match Algorithm Example

## Applicants' Rank Order Lists

Eight applicants are applying to four programs. After considering the relative desirability of each program, the applicants submit the following rank order lists to the NRMP.

Anderson	Brown	Chen	Davis	Eastman	Ford	Garcia	Hassan
1. City	1. City	1. City	1. Mercy	1. City	1. City	1. City	1. State
	2. Mercy	2. Mercy	2. City	2. Mercy	2. General	2. Mercy	2. City
			3. General	3. State	3. Mercy	3. State	3. Mercy
			4. State	4. General	4. State	4. General	4. General

# Match Algorithm Example

## Programs' Rank Order Lists

Two positions are available at each program. The four programs, having determined their preferences for the eight applicants, also submit rank order lists to the NRMP.

<b>Mercy</b>	<b>City</b>	<b>General</b>	<b>State</b>
1. Chen	1. Garcia	1. Brown	1. Brown
2. Garcia	2. Hassan	2. Eastman	2. Eastman
	3. Eastman	3. Hassan	3. Anderson
	4. Anderson	4. Anderson	4. Chen
	5. Brown	5. Chen	5. Hassan
	6. Chen	6. Davis	6. Ford
	7. Davis	7. Garcia	7. Davis
	8. Ford		8. Garcia

# Match Algorithm Example

APPLICANT	TRY TO PLACE IN	CURRENT PROGRAM STATUS	ACTION / RESULT (Shaded boxes indicate the final matches when the process is completed.)
ANDERSON	1. City	City has 2 unfilled positions.	Tentatively match Anderson with City.
BROWN	1. City	City has 1 unfilled position.	Tentatively match Brown with City.
CHEN	1. City	City is filled with more preferred applicants.	
	2. Mercy	Mercy has 2 unfilled positions.	Tentatively match Chen with Mercy.

# Match Algorithm Example

EASTMAN	1. City	Although filled, City prefers Eastman to its least preferred current match (Brown).	Brown is removed from City to make room for Eastman. Tentatively match Eastman with City.
			Since Brown has just been removed from a previous tentative match, an attempt must now be made to re-match Brown.
BROWN	1. City	City is filled with more preferred applicants.	
	2. Mercy	Mercy did not rank Brown.	Brown remains unmatched.

# MedPhys Match Couples Match

- Couples are allowed to coordinate their matches.
- Each applicant must identify each other as a couple.
- Each couple's rank order list must be paired:
  - First choice program on each list is the couple's first choice pair;
  - Second choice program on each list is the couple's second choice pair;
  - ...
- Couples may rank paired positions which are in different cities.
- Couples may rank pairs of choices where only one partner is matched.
- Couple's match coordination is only indicated within NMS. This information is not obtained within MP-RAP.

# MedPhys Match Couples Match Example

## STEP 1:

Each partner should first prepare his/her own, individual preference list on a separate sheet of paper. In the following example, the letters refer to a specific program offered in that city.

### Partner I

- 1) New York-A
- 2) Philadelphia-A
- 3) Chicago-A
- 4) Chicago-B
- 5) New York-D

### Partner II

- 1) New York-B
- 2) Philadelphia-B
- 3) New York-C
- 4) Chicago-A
- 5) Chicago-B
- 6) New York-D

# MedPhys Match Couples Match Example

## STEP 3:

Next both partners decide together on the **order** in which these pairs are preferred. The couple might have a final Rank Order List of paired programs that looks like the one shown below. **Each partner must then enter his/her side of the list independently into the ROLIC system.**

### Partner I

- 1) New York-A\*
- 2) Philadelphia-A\*
- 3) New York-A\*

### Partner II

- 1) New York-B
- 2) Philadelphia-B\*
- 3) New York-C



12) New York-A\*

13) Philadelphia-A\*

14) New York-A\*

15) Chicago-A\*

16) New York-A\*

12) Philadelphia-B\*

13) New York-B

14) Chicago-A

15) New York-B

16) No Match (Program Code 99999)

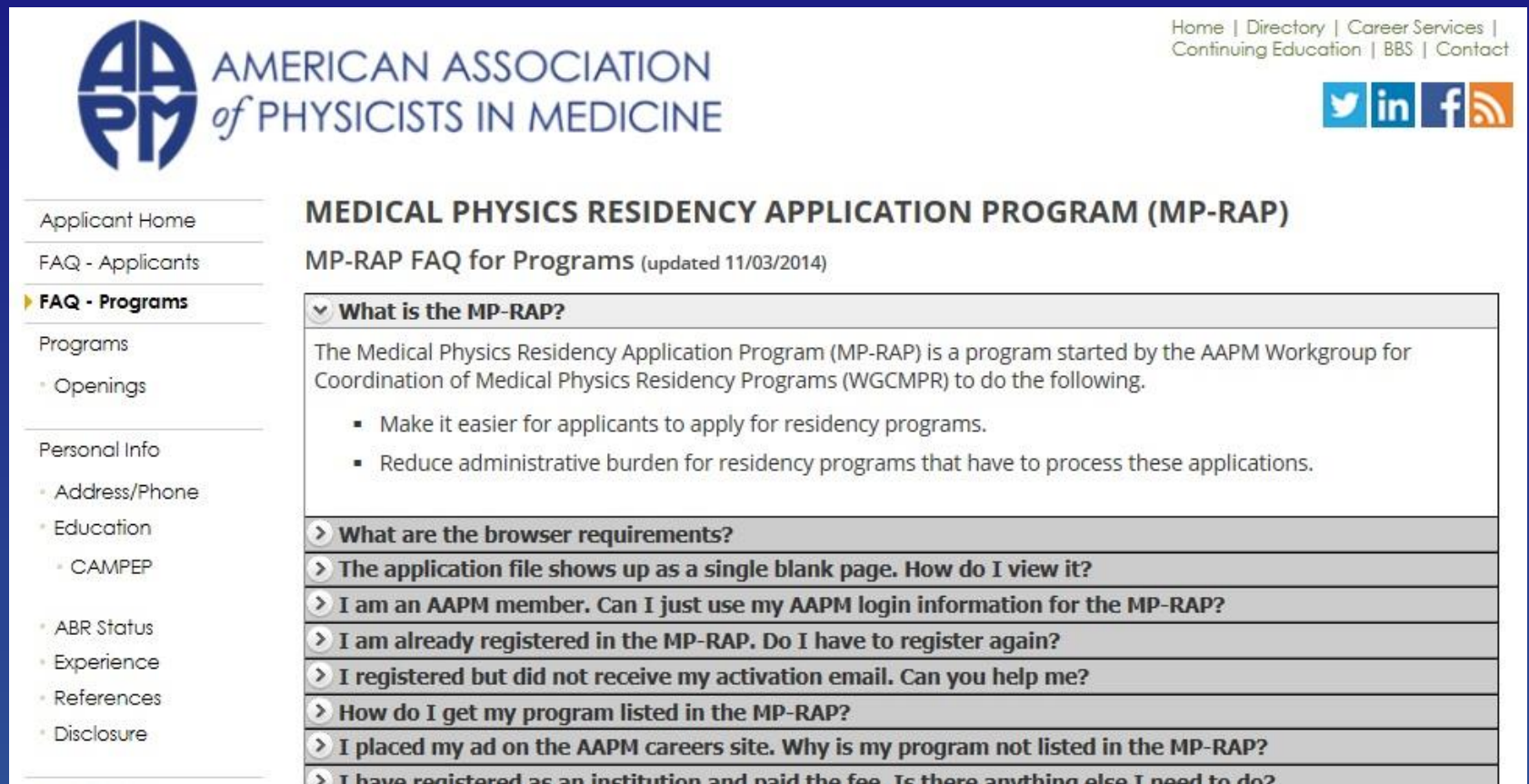
\*Indicates match if individually applied

How is participation in this year's program?







# Resident Recruitment National Statistics

## Medical Physics Residency Application Program (MP-RAP)



The screenshot shows the AAPM website's MP-RAP FAQ page. The header includes the AAPM logo and navigation links. The left sidebar contains a menu with categories like Applicant Home, Programs, Personal Info, and ABR Status. The main content area features a list of FAQ questions, with the first one expanded to show the program's purpose and goals.

Home | Directory | Career Services | Continuing Education | BBS | Contact

**AMERICAN ASSOCIATION  
of PHYSICISTS IN MEDICINE**

Applicant Home

FAQ - Applicants

**FAQ - Programs**

Programs

- Openings

Personal Info

- Address/Phone
- Education
  - CAMPEP
- ABR Status
- Experience
- References
- Disclosure

### MEDICAL PHYSICS RESIDENCY APPLICATION PROGRAM (MP-RAP)

#### MP-RAP FAQ for Programs (updated 11/03/2014)

**What is the MP-RAP?**

The Medical Physics Residency Application Program (MP-RAP) is a program started by the AAPM Workgroup for Coordination of Medical Physics Residency Programs (WGCMPR) to do the following.

- Make it easier for applicants to apply for residency programs.
- Reduce administrative burden for residency programs that have to process these applications.

**What are the browser requirements?**

**The application file shows up as a single blank page. How do I view it?**

**I am an AAPM member. Can I just use my AAPM login information for the MP-RAP?**

**I am already registered in the MP-RAP. Do I have to register again?**

**I registered but did not receive my activation email. Can you help me?**

**How do I get my program listed in the MP-RAP?**

**I placed my ad on the AAPM careers site. Why is my program not listed in the MP-RAP?**

**I have registered as an institution and paid the fee. Is there anything else I need to do?**

# Resident Recruitment MP-RAP Statistics (2015)

- **Institutions: 75 Programs participated**
  - Programs received 16 – 274 applications
    - 16 is for one program that opened 3/6/15. Excluding this, the range is 46-274.
    - A few imaging programs received ~50 applications
    - 31 Tracks received > 150 applications.
- **Applicants: 318 unique applicants**
  - Total of 10146 applications (average of 32 applications/applicant).

# Resident Recruitment MedPhys Match Statistics (2015)

- Institutions: 76 Programs participated, 87 tracks, 107 positions
  - 66 Therapy Programs; 10 imaging programs
  - 68 CAMPEP-accredited; 8 Non-accredited
  - All programs participated in MP-RAP
- Applicants: 400 unique applicants

# MedPhys Match

## Program Participation (2015)

- Accredited Therapy Programs
  - 61/79 Accredited Therapy Programs participating
  - Of the 18 non-participating programs
    - 9 are outside the US (2 Canadian programs are participating)
    - 2 are affiliated with graduate programs
    - 3 do not have positions in 2015
  - 59/63 of US programs taking applicants are in the match
- Accredited Imaging Programs
  - 8/11 Accredited Imaging Programs participating
  - One Canadian program not participating
- Total US Program Participation: 67/73 (92%)

# MedPhys Match

## Future Issues to Consider

- Match for second and potentially third years?
- Program/Applicant support for post-match available slots.
- Limitation to the number of resident applications supported by AAPM

# Conclusions

- MedPhys Match was approved by the AAPM and SDAMPP last Summer and is being utilized for medical physics placement in 2015.
- Program participation is high, with over 90% of those accredited US programs in both therapy and imaging recruiting for 2015.
- Rank Order List deadline is less than 2 weeks away, and the final match will occur on March 27.