# SDAMPP Coffee Break: CAMPEP Graduate Programs Annual Report Results- AY 2023-2024

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#### **Graduate Programs Updates**

- Program Submission Updates
- Review of Graduate Program Annual Reports AY-2023-2024
- Proposed updates to Graduate Standards



Commission on Accreditation of Medical Physics Education Programs, Inc.

#### Graduate Education Programs

Accredited Degree Programs

General Information/ Information for Program Directors

Standards for Accreditation of Graduate Educational Programs

#### **Graduate Programs**

CAMPEP offers accreditation of graduate educational programs in medical physics. The goal is to ensure that a graduate program provides rigorous and thorough education such that program graduates are equipped with the appropriate skills to pursue a career in medical physics.

The **Process** of CAMPEP accreditation of graduate programs requires that the program submit a self assessment report using the **template** available giving evidence of consistency with a set of clearly stated **standards**. After review of this report, a survey team will conduct a program site visit to validate the assessment. If successful, accreditation is granted for a period of 3 years. Re-accreditation requires an updated self assessment report. The **Graduate Education Program Review Committee (GEPRC)** is responsible for managing the accreditation of graduate programs and Graduate Program Accreditation and Reaccreditation Self-Study Submissions

- MOCAM has limited support for updates and revisions
- Transitioning to SurveyMonkeyApply system

- Currently being implemented for Residency Program applications
- Template established for Graduate Programs

# May 2025 Status Overview of Graduate Programs

2025 (2021)

(2)

(4)

- # Accredited graduate programs (institutions): 65 (57)
- # Accredited DMP programs: 4 (4)
- # Programs in initial review process: 1
- # Accredited programs in:
  - US 47 (42) - Canada 15 (11)
  - Outside North America

#### Accredited Certificate Programs

- *#* in Graduate programs:
- *#* in Residency programs:



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# AY 23-24 Program Reports Program Degree Offerings (61 Programs)

| # Programs offering: | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2024 |
|----------------------|------|------|------|------|------|------|------|
| MS Degrees           | 47   | 47   | 48   | 49   | 50   | 52   | 54   |
| PhD Degrees          | 36   | 37   | 38   | 38   | 39   | 40   | 44   |
| MS & PhD Degrees     | 31   | 32   | 33   | 32   | 33   | 34   | 35   |
| MS Degree Only       | 16   | 15   | 15   | 14   | 16   | 18   | 19   |
| PhD Degree Only      | 5    | 5    | 5    | 6    | 7    | 6    | 9    |
| DMP                  | 4    | 5    | 5    | 5    | 5    | 4    | 4    |
| MS & DMP             |      |      |      | 5    | 5    | 4    | 4    |
| Certificate          | 26   | 27   | 27   | 27   | 29   | 29   | 38   |

#### All Graduate Admissions



#### Graduate Program (MS, PhD, DMP) Applicants

|                             | 2015    | 2016    | 2017    | 2018    | 2019        | 2020        | 2021        | 2024        |
|-----------------------------|---------|---------|---------|---------|-------------|-------------|-------------|-------------|
| # applications reviewed     | 1836    | 1921    | 2012    | 2098    | 1914        | 2535        | 2235        | 2554        |
| # offered<br>admission      | 577     | 608     | 594     | 669     | 677         | 862         | 778         | 795         |
| # matriculated              | 294     | 325     | 314     | 353     | 284         | 417         | 316         | 411         |
| Average GPA<br>(MS/PhD/DMP) | 3.5/3.6 | 3.5/3.7 | 3.4/3.6 | 3.4/3.6 | 3.5/3.7/3.4 | 3.5/3.6/3.4 | 3.5/3.8/3.4 | 3.4/3.6/3.6 |



#### Number of Minorities in Grad Programs



# Diversity

#### **Entering Class – Gender**

|                    | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2024 |
|--------------------|------|------|------|------|------|------|------|------|
| MS/MSc –<br>Female | 33%  | 39%  | 38%  | 35%  | 37%  | 36%  | 36%  | 37%  |
| PhD – Female       | 32%  | 37%  | 42%  | 39%  | 33%  | 37%  | 40%  | 37%  |
| DMP - Female       | 15%  | 42%  | 42%  | 80%  | 17%  | 29%  | 66%  | 8%   |

#### Entering Class – Ethnicity

|                         | 2016 | 2017 | 2018  | 2019 | 2020 | 2021 | 2024 |
|-------------------------|------|------|-------|------|------|------|------|
| Black                   | 7    | 13   | 7     | 10   | 15   | 14   | 24   |
| Latino                  | 20   | 15   | 35    | 24   | 20   | 29   | 22   |
| Native American         | 1    | 0    | 0     | 0    | 3    | 1    | 1    |
| Pacific Islanders       | 1    | 1    | 2     | 1    | 0    | 4    | 1    |
| % under-<br>represented | 6.4% | 7.5% | 11.1% | 9.8% | 9.1% | 7.3% | 7.3% |
| Other                   | 37   | 30   | 33    | 27   | 30   | 9    | 35   |

#### Enrollments



### **Enrollment and Graduates**

|            | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2024 |
|------------|------|------|------|------|------|------|------|------|
| Enrollment |      |      |      |      |      |      |      |      |
| MS/MSc     | 449  | 402  | 416  | 447  | 433  | 501  | 488  | 547  |
| PhD        | 572  | 577  | 583  | 603  | 598  | 660  | 637  | 679  |
| DMP        | 35   | 35   | 40   | 34   | 29   | 24   | 19   | 26   |
| Total      | 1056 | 1014 | 1039 | 1084 | 1060 | 1185 | 1144 | 1252 |
| Graduates  |      |      |      |      |      |      |      |      |
| MS/MSc     | 202  | 139  | 159  | 168  | 171  | 193  | 203  | 280  |
| PhD        | 99   | 89   | 94   | 94   | 103  | 130  | 113  | 131  |
| DMP        | 6    | 6    | 10   | 11   | 10   | 9    | 10   | 6    |
| Total      | 307  | 234  | 263  | 273  | 284  | 300  | 326  | 417  |

### **Premature Departure**

|                     | 2018 | 2019 | 2020 | 2021 | 2024 |
|---------------------|------|------|------|------|------|
| Medical or personal |      |      |      |      |      |
| reasons:            | 14   | 10   | 15   | 3    | 8    |
| Poor academic       |      |      |      |      |      |
| performance:        | 3    | 8.5  | 3    | 4    | 4    |
| Left to take job:   | 3    | 7    | 2    | 5    | 1    |
| Not a match for     |      |      |      |      |      |
| interests:          | 3    | 5.5  | 6    | 5    | 8    |
| Failed required     |      |      |      |      |      |
| examinations        | 1    | 2    | 2    | 0    | 1    |
| Other:              | 1    | 6    | 0    | 7    | 4    |
| Total               | 25   | 39   | 28   | 24   | 26   |

#### MS/MSc Graduate Destination (280)

|                         | 2016 | 2017 | 2018 | 2019        | 2020     | 2021     | 2024     |
|-------------------------|------|------|------|-------------|----------|----------|----------|
| Applied to residency    |      | 50%  | 43%  | 53%<br>(91) | 40% (78) | 40%(82)  | 42%(118) |
| Accepted into residency |      | 68%  | 68%  | 74%<br>(67) | 73% (57) | 78% (64  | 81% (95) |
| Entered RT<br>residency | 30%  | 28%  | 28%  | (54)        | 27%(48)  | 27% (54) | 31% (86) |
| Entered IP<br>residency | 4%   | 5%   | 5%   | 6%<br>(11)  | 5% (9)   | 6% (12)  | 8% (21)  |
| Clinical position       | 17%  | 8%   | 8%   | 11%<br>(19) | 12% (24) | 6% (13)  | 10% (29) |
| Another degree          | 35%  | 38%  | 38%  | 33%<br>(57) | 25% (48) | 21% (42) | 29% (81) |
| Position in industry    | 7%   | 7%   | 7%   | 8%<br>(13)  | 8% (15)  | 4% (9)   | 9% (25)  |
| Position in government  | 2%   | 1%   | 1%   | 1% (2)      | 1% (2)   | 2% (3)   | 2% (5)   |
| Still seeking position  | 2%   | 4%   | 4%   | 1% (2)      | 5% (11)  | 3% (7)   | 5% (13)  |
| Position outside<br>MP  | 0%   | 1%   | 8%   | 1% (2)      | 4% (8)   | 7% (15)  | 7% (1)   |

81 % Percent of MS who applied to residency were accepted

## PhD Graduate Destination (131)

|                            | 2016 | 2017 | 2018 | 2019     | 2020     | 2021     | 2024     |             |
|----------------------------|------|------|------|----------|----------|----------|----------|-------------|
| Applied to<br>residency    |      | 54%  | 48%  | 49% (50) | 48% (62) | 47%(53)  | 63%(83)  |             |
| Accepted into<br>residency |      | 102% | 96%  | 98% (49) | 94% (58) | 96% (51) | 99% (82) | 999<br>of I |
| Entered RT<br>residency    | 37%  | 41%  | 48%  | 45% (46) | 42% (49) | 47%(53)  | 50%(65)  | ар          |
| Entered IP<br>residency    | 9%   | 11%  | 6%   | 8% (8)   | 8% (9)   | 5% (6)   | 13% (17) | res<br>we   |
| Clinical non-<br>academic  | 15%  | 10%  | 5%   | 8% (8)   | 2% (3)   | 5% (3)   | 7% (9)   | acc         |
| Position in<br>academia    | 19%  | 24%  | 21%  | 13% (13) | 8% (10)  | 12% (13) | 8% (11)  |             |
| Position in industry       | 3%   | 1%   | 5%   | 5% (5)   | 11% (14) | 13% (15) | 6% (8)   |             |
| Position in<br>Government  | 3%   | 0%   | 2%   | 3% (3)   | 3% (4)   | 1% (1)   | 4% (5)   |             |
| Position outside<br>MP     | 3%   | 3%   | 4%   | 4% (4)   | 6% (8)   | 4% (5)   | 2% (2)   |             |
| Still seeking a position   | 3%   | 1%   | 4%   | 4% (4)   | <1% (1)  | 2% (13)  | 0% (0)   |             |

99% Percent of PhDs who applied to residency were accepted

#### Certificate Programs 31 Programs

|            | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2024 |
|------------|------|------|------|------|------|------|------|------|
| Enrollment | 79   | 66   | 39   | 50   | 49   | 51   | 62   | 122  |
| Graduates  | 28   | 24   | 38   | 27   | 42   | 32   | 43   | 51   |

#### **Certificate Graduate Destinations (51)**

|                            | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2024    |
|----------------------------|------|------|------|------|------|------|---------|
| Accepted into<br>residency | -    | 45%  | 81%  | 67%  | 69%  | 67%  | 65%(33) |
| Entered RT<br>residency    | -    | 32%  | 70%  | 64%  | 60%  | 58%  | 47%(24) |
| Entered IP<br>residency    | 4%   | 3%   | 11%  | 10%  | 0%   | 9%   | 6%(3)   |

## **Certificate Graduate Destinations (43)**

|                                   | 2016 | 2017 | 2018 | 2019 | 2020 | 2021  | 2024 |
|-----------------------------------|------|------|------|------|------|-------|------|
| Accepted into<br>residency        | -    | 45%  | 81%  | 67%  | 69%  | 67% 🤇 | 77%  |
| Entered RT<br>residency           | -    | 32%  | 70%  | 64%  | 60%  | 58%   | 56%  |
| Entered IP<br>residency           | 4%   | 3%   | 11%  | 10%  | 0%   | 9%    | 7%   |
| Non-academic<br>clinical          | 46%  | 32%  | 56%  | 7%   | 6%   | 11%   | 7%   |
| Entered another<br>degree program | 4%   | 3%   | 11%  | 0%   | 0%   | 0%    | 0%   |
| Position in academia              | 4%   | 8%   | 11%  | 10%  | 22%  | 16%   | 12%  |
| Position in<br>industry           | 0%   | 0%   | 0%   | 0%   | 3%   | 5%    | 2%   |
| Position in<br>Government         | 38%  | 5%   | 11%  | 0%   | 0%   | 0%    | 2%   |
| Position outside<br>MP            | 0%   | 0%   | 0%   | 2%   | 3%   | 0%    | 0%   |
| Still seeking a position          | 0%   | 0%   | 0%   | 5%   | 3%   | 0%    | 16%  |

#### **DMP Graduate Destination (6)**

|                         | 2020    | 2021    | 2024    |
|-------------------------|---------|---------|---------|
| Non-academic clincial   | 89% (8) | 80% (8) | 75% (4) |
| Academic (tenure-track) | 11% (1) | 20% (2) | 17% (1) |
| Industry                | 0       | 0       | 17%(1)  |

#### **Updates to Graduate Standards**

- Promote equal depth of coverage for all subject areas
  Modified Narrative/Preamble for Grad Standard 8
- Provide more definitive descriptions for foundational physics

## **Draft Standards Language**

#### **Core Graduate Curriculum**

The structure of course work in a graduate medical physics educational program may be defined by the program but shall, as a minimum, include the topics identified in Graduate Standards 8.1 through 8.7. as part of the graduate curriculum

Graduate programs shall provide education in all core topics at an appropriate graduate-level depth. CAMPEP will assess compliance with these Graduate Standards based on the course materials provided by the program. Graduates of a CAMPEP-accredited graduate program should be equally prepared to enter a CAMPEP-accredited residency program in a clinical specialization of the student's choice.

•Typically, completion of a master's program will take two academic years. Significant deviations from this period should be justified.

### **Grad Standard 3.1**

Students entering a medical physics graduate educational program shall have a strong foundation in basic physics. This shall be demonstrated either by an undergraduate degree in physics, or by a degree in an engineering discipline, or another of the physical sciences, <u>and</u> a minimum of three fundamental upperlevel physics courses taught through a physics department. Fundamental physics courses may include, but are not limited to: classical mechanics, modern physics, quantum mechanics, electromagnetism, statistical physics, thermodynamics, optics, nuclear/particle physics and astrophysics. Acknowledgement Thanks to all program directors for timely response to our request for data.