Collaboration In A Special Master’s Program Increases Diversity In An Osteopathic Medical College

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Objective 1

To inform participants about the best practices and evidence-based curriculum of the MSMS program, which prepares students for the intense curriculum in professional school.
WesternU Masters of Science in Medical Sciences (MSMS)

Vision: The MSMS program is designed to assist individuals from diverse backgrounds in gaining acceptance to professional schools with the ultimate goal of increasing the number of health-professionals in underserved areas.
WesternU and Our Community

- WesternU is located in Pomona, a city in Los Angeles county
  - ~70% Hispanic
  - ~7% Black or African American
  - 22% of the population lives at or below the poverty level

The MSMS program considers a diverse applicant one who is:

- Underrepresented in Medicine (URiM), and/or
- Low socio-economic status (SES), and/or
- Experienced an educational disadvantage (first generation to attend college)
Selection of Matriculants

**MSMS Mission Fit:**
- Expanded race and ethnicity questions
- Collect *objective* SES data and parental educational information

**Academic Potential:**
- Evaluate academic potential using GPA, transcripts and consider class load/employment

**Interview:**
- Mission fit, cultural humility, service commitment and involvement with underserved areas and populations
The "Other" category includes students from low SES and/or educationally disadvantaged backgrounds.
Performance in Program

• Incoming metrics:
  • **MCAT**: 17 – 32 (average 24.3) and 482-514 (average 499.4)
  • **Undergraduate GPA**: overall 3.25 (2.68-3.87) and Science GPA 3.12 (2.26-4.0)

• MSMS Program GPA upon completion 3.44 ± 0.27 (n= 138)

• 131 program graduates have matriculated to medical school

• 7 graduates are employed in STEM careers

• 8 Students did not complete program but 3 of these transferred to other graduate/professional schools
Best Practices in MSMS Program

- Cohort-structure, team building and team-based learning
- Accelerated load of basic biomedical science courses together with professional development
  - Medical Anatomy, Cell & Molecular Biology, Biochemistry, Microbiology and Physiology
- Exposure to research to increase critical thinking skills
- Wrap-around attention (includes professional school faculty advisors)
- Intrusive advising and success plans
MSMS Student Performance in COMP

- Current program cut-off for transition to COMP is an MSMS program GPA ≥ 3.1
- Performance in medical school is highly correlated (P < 0.01) with their MSMS program GPA

Class rank after pre-clinical coursework; 
n = 123, from DO 2015-2021*
Relative COMP Class Rank (Pre-Clinical Course Work)

COMLEX Level 1 vs Class Rank

- MSMS performance correlates with relative rank in medical school.
- Medical school performance correlates with performance on the COMLEX Level 1.
- Thus the MSMS program helps prepare students to succeed in the pre-clinical curriculum, and thus the boards.

$R^2 = 0.5275$

N = 81
DO 2015 - DO 2019
COMLEX Level 1 Performance

Mean ± std dev
Passing score: 400

2011-2013 Cohort (n = 54)
- 24% 1st time fails

2014-2015 Cohort (n = 27)
- 4% 1st time fails*

1st time fails*
Objective 2

To discuss the impact students from pre-matriculation programs can have on their cohort and college.

SUMMARY:

- 88 MSMS graduates in COMP (about 75% of the total) reported that they are or were involved in clubs and/or community service, the majority of them in multiple activities.
LEADERSHIP IN COMMUNITY SERVICE

MSMS graduates hold key community service positions:

- President of Pomona Homeless Outreach Program
- President and VP of Pipeline to Health Careers at both Pomona and Lebanon
- President, Pomona Community Health Action Team (PCHAT)

MSMS graduates have established on-going initiatives including:

- Medical Spanish for COMP students
- After school tutoring program
- Community garden for the Pomona Unified School District.
LEADERSHIP ON CAMPUS

MSMS graduates at WesternU have held key leadership positions on campus, including:

• Executive SGA President for all WesternU Colleges
• President and Vice-President of SGA for several Classes
• Secretary, Sigma Sigma Phi
• President, COMP Council of Leaders
• Vice-President of Student Osteopathic Surgical Association
INCLUSION AND DIVERSITY INVOLVEMENT

• MSMS graduates hold key positions in clubs, regional and national organizations that enhance diversity and inclusion such as LMSA, SNMA, Lambda & Friends, South Asian Student Association.

• MSMS graduates have received many awards that recognize their contribution to increasing diversity and inclusion including:
  • Leonard Tow Humanism in Medicine Award
  • The American Medical Association Foundation Minority Scholars Award
  • The National Association of Minority Medical Educators Award

• MSMS graduates participate as admissions ambassadors for both the MSMS and the COMP programs
ACADEMIC SUCCESS

MSMS graduates have received numerous scholarships and awards, including:

• San Diego Foundation's San Miguel Association Medical Scholarship - Family Medicine
• Merck Manual Academic Excellence Award
• Osteopathic Physicians and Surgeons of California (OPSC) Award
• Kaiser Permanente Northern California Scholarship
RESEARCH HIGHLIGHTS

• 31 peer-reviewed articles published with MSMS students as co-authors, including 13 as first authors

• MSMS students have delivered 25 presentations at regional, national or international meetings

• One MSMS graduate received a Summer Oncology Fellowship from Johns Hopkins School of Medicine to study cancer in underserved communities.

• One MSMS graduate did an Orthopaedic Summer Internship in LA supported by Nth Dimensions and culminating in a research poster at the National Medical Conference in Philadelphia
Objective 3

To inform participants about the advantages of engaging with multiple stakeholders to ensure strong collaboration and program success.
Key Stakeholders and Professional School admissions

- Communicate with professional school faculty about the success of MSMS graduates and to encourage looking beyond their incoming metrics.
- Involve professional school faculty in the selection of MSMS students into the MSMS program
  - use data to allow for an evidence-based approach for admissions that engages key faculty from COMP, CDM, and CO
- Develop minimal acceptable guidelines for MSMS and COMP admissions
  - Pre-matriculation into MSMS: Overall and Science GPA above a 2.5
  - MCAT: 494
  - Matriculation into COMP: GPA of 3.1 from MSMS
Summary

• The MSMS program has developed a curriculum that prepares students for pre-clinical work

• Selection of students for the MSMS program focuses on diverse students who have the potential to achieve success

• Incoming metrics (undergraduate GPA and MCAT scores) do not have a good relationship to success in the MSMS program

• The MSMS graduates play a significant role in the social mission of both COMP and WesternU

• Successful implementation of the MSMS program requires collaborations at all levels of the institution
THANK YOU!!!!

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