

Delaware Mini Medical School

An Expeditionary and Health Literacy Program for Youth, Young Adults, and Those Exploring New Career Options

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Introduction

Delaware Mini-Medical School (DMMS) is a free, six-week series designed for individuals who want to gain a deeper understanding of the world of healthcare – from dentistry and medicine to public health and research. This series is designed for middle, junior, high school, and undergraduate students, though all are welcome to attend. Attendees learn about trends in diagnosing and treating illness and general health topics. Faculty provide in-depth lectures and allow time for questions to enhance the experience.

DMMS complements many other local programs targeting differing age groups and disciplines, encouraging and preparing students for a career in the health sciences. Unlike many of the other programs, there are no tests and grades to enter the program or to obtain a certificate of attendance. This is consistent with our goal to remove as many barriers as possible to engagement.

History

DMMS has been operating continuously since 2009. When the COVID-19 pandemic occurred, we migrated the series from in-person to online presentations and shifted the focus to more of an upstream intervention to engage youth and young adults considering careers in the healthcare and biosciences fields—both areas already experiencing workforce shortage stresses.

DMMS is currently a funded component of the Delaware Health Force initiative. For this article, the statistics and information presented start with the infusion of American Rescue Plan Act (ARPA) funding from the State of Delaware in 2023, which supported the significant expansion of this program.

Where DMMS used to be presented once a year in the spring, we expanded to present four times a year, two series in the spring, and two in the fall.

Two Year Curriculum Scope

Table 1 below shows the topics covered by DMMS during the ARPA funding period.

Table 1. Delaware Mini Medical School Presentation Topics

Anesthesia	Immunization and Public Health
Anxiety - types, identification, and treatment	Interventional Cardiology
Athletic Training	Neuro-Interventional Surgery
Bariatric Surgery	Neurology
Behavioral Health	Pediatric Nursing
Cardiology	Physical Therapy

Dentistry	Prenatal Care and Childbirth
Emergency Medicine	Primary Care
Family Medicine	Primary Care in Special Populations
From Nurse to Nurse Practitioner	Psychiatry
Gene Editing	Radiology
Health Informatics	Stroke
Heart & Circulatory Health	Women's Health
Hospice and Palliative Care	Working with Addictions

Two Year Scope of Presenter Types

Consistent with our workforce-building strategy, degree representation has been present over the past two years (Table 2). For all degrees shown below, there are workforce shortages. Our practice is to expose the cohort to a range of provider types who talk about their own educational journey and how they got to where they are now in their careers. We do this to provide transparency regarding the pathway individuals took and allow the participants to consider this in relation to their own aspirations and life goals.

Table 2. Degree Types Represented in Delaware Mini Medical School

ABPP	Rehabilitation Psychology	LCSW	Licensed Clinical Social Worker
	Bachelor of Science in Radiologic		
BS RT(T)	Technology	MD/DO	Medical Doctor
BSN	Bachelor of Science in Nursing	MPH	Master in Public Health
CHW	Community Health Worker	MSN	Master of Science in Nursing
CNM	Certified Nurse Midwife	NP	Nurse Practitioner
DMD/DDS	Dentist	PhD	Doctor of Philosophy
DNP	Doctor of Nursing Practice	PsyD	Doctor of Psychology
DPT	Doctor of Physical Therapy	PT	Physical Therapist
EDD	Doctor of Education	RN	Registered Nurse

Student Characteristics

Since starting this pattern of two series in the spring and two in the fall in 2023, we have had a total of 3,058 students. Several of those students (720) have returned to take the series again, as each one is unique in content and degree representation. Adjusting for duplicates, we have engaged with 2,338 unique students.

Equitable access to the program through all communities, including communities of color, is a fundamental goal of DMMS. Since 1994 it has been observed that patient satisfaction and resulting health outcomes are better when the patient and provider share racial/ethnic similarities.¹ The overall race and ethnic distribution of Delaware (figure 1) and that of the DMMS student cohort (figure 2) are shown below. DMMS have succeeded in representing non-white minorities in the cohort beyond their representation statewide as based on US Census Data.

Figure 1. Delaware Racial and Ethnic Diversity

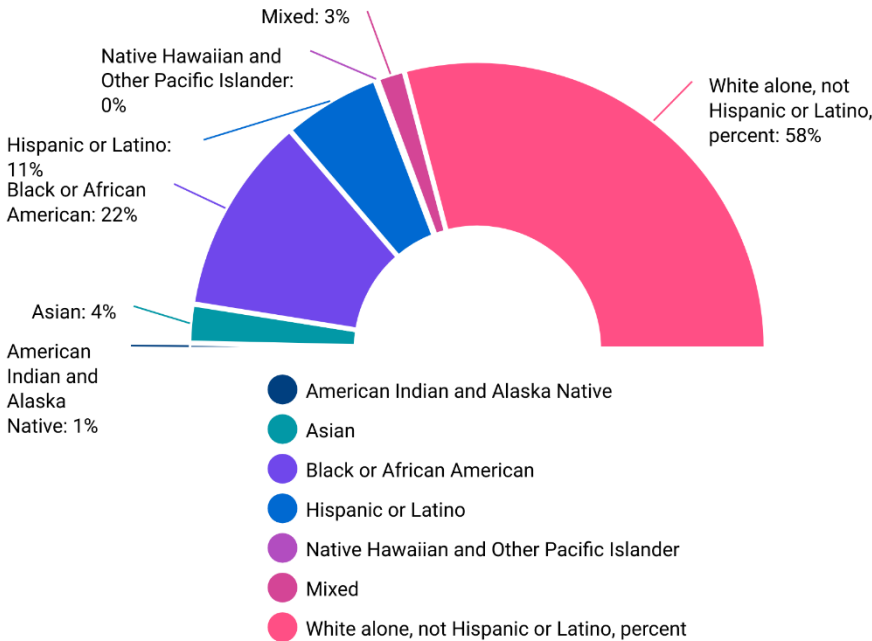
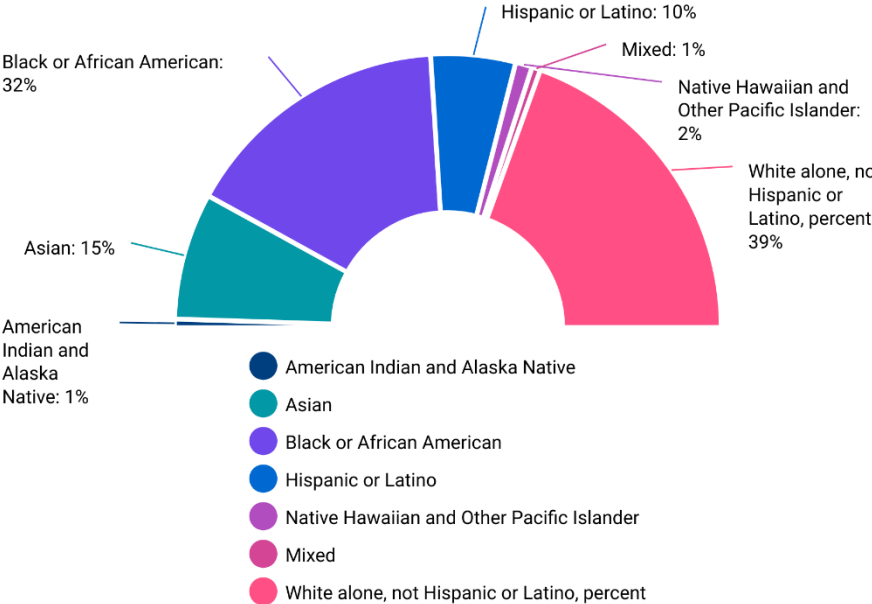
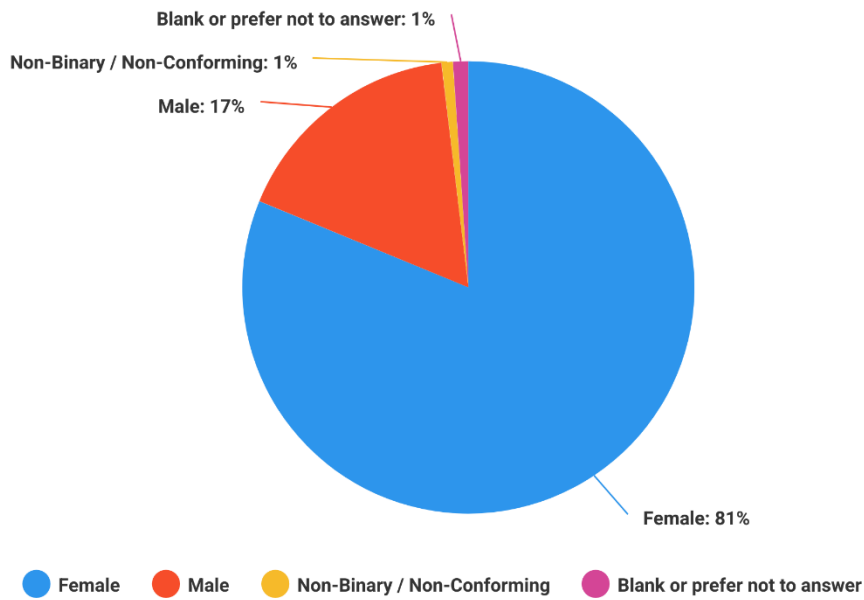


Figure 2. DMMS Student Cohort Racial and Ethnic Diversity



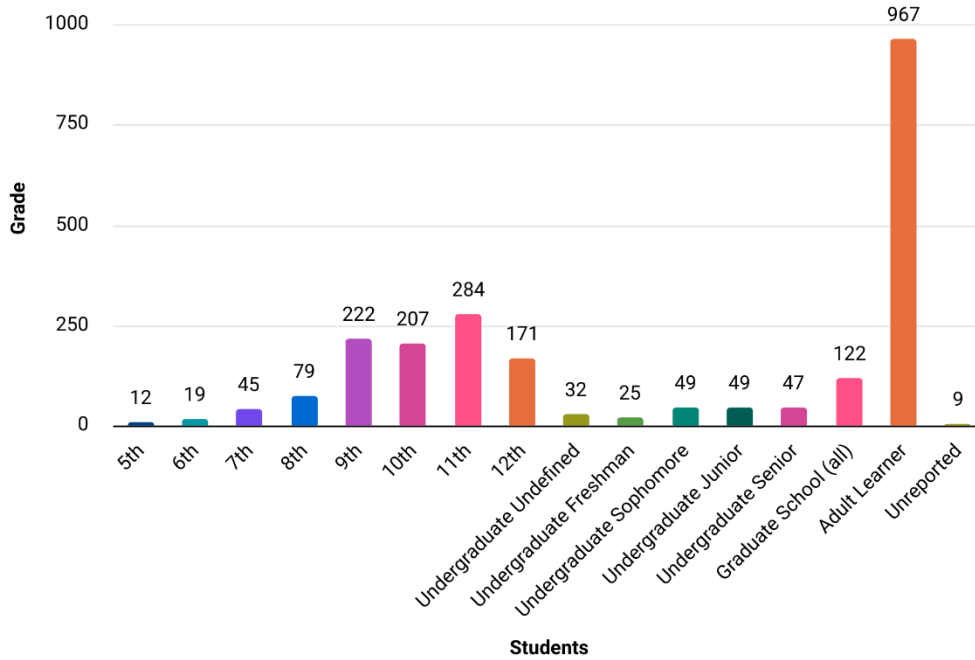
Regarding gender, figure 3 shows the prevalence of female participants (81%), followed by male (17%) and non-binary / non-conforming and blank or prefer not to answer at 1% each.

Figure 3. DMMS Student Cohort Gender Representation



With respect to age demographics, we use reported grade level as our proxy and find the following distribution (figure 4). While there is a concentration of DMMS students in ninth, tenth, eleventh, and twelfth grades, there is also even younger engagement as early as the fifth grade (the youngest class eligible to participate).

Figure 4. DMMS Student Grade Distribution



There is also a healthy and even distribution throughout undergraduate school, and a small but significant showing in graduate school.

Adult learners represent an essential component (41.9%) of the cohort, and many of them are the parents or caregivers of younger students. While we do not directly report on their age, rather we make the correlation based on identical addresses and other metrics as well as self-reporting during the series.

Other adult learners report informally, that they are in the process of mid-career redirection, and we welcome them to the class as well. A reality of population growth is that we cannot rely only on youth to supply the necessary numbers to address the retiring portion of the provider population, nor the continued population growth.

Top 30 Educational Institutions Represented

Students report an association with 318 academic institutions from middle school to graduate schools (table 3). A complete list of these schools is available at <https://dehealthforce.org> or <https://delawareminimed.org>. Notably, DMMS students are mostly from Delaware institutions, followed by those from surrounding states, and a small number from other states. DMMS has even reached students in Canada, France, Indonesia, Iran, Turkey, and the United Kingdom. This geographic range is only possible through the adoption of an online webinar format for the series. Parents have indicated strong support for this format as it frees them from transportation challenges with their children. Adult learners report they enjoy the ability to log in remotely from the comfort of their home or other location.

Table 3. Top Educational Institutions Represented in Alphabetical Order

Appoquinimink High School	Middletown High School
Aspira High School	MOT Charter High School

Cab Calloway School of the Arts	Newark Charter High School
Caesar Rodney High School	Newark High School
Cape Henlopen High School	Odessa High School
Charter School of Wilmington	Padua Academy
Delaware Technical Community College	Saint Mark’s High School
Delcastle Technical High School	Salem County Vocational Technical School
Delaware State University	Smyrna High School
Dover High School	Sussex Central High School
Georgetown Middle School	Sussex Academy of the Arts and Sciences
Hodgson Vocational Technical High School	Tower Hill School
Howard High School of Technology	University of Delaware
Lake Forest High School	William Penn High School
Laurel High School	Wilmington University

A major goal of the addition of ARPA-funding was to bring the series to communities across the state. We have found the best success in engaging local healthcare institutions to support DMMS by arranging for their staff to act as our instructors. We have been pleased to partner with **ChristianaCare, Bayhealth, La Red Health Center, Beebe Healthcare**, and several independent practitioners. We are also working with **Nemours Children’s Health** for one of the two spring 2025 series.

We engaged the Sussex County Health Coalition (SCHC), which operates in Kent and Sussex counties, as our partner in central and southern Delaware. The SCHC is well known and established, and this has proven to be a significant programmatic partnership. All of these strategic decisions have led to even representation from all three counties in Delaware.

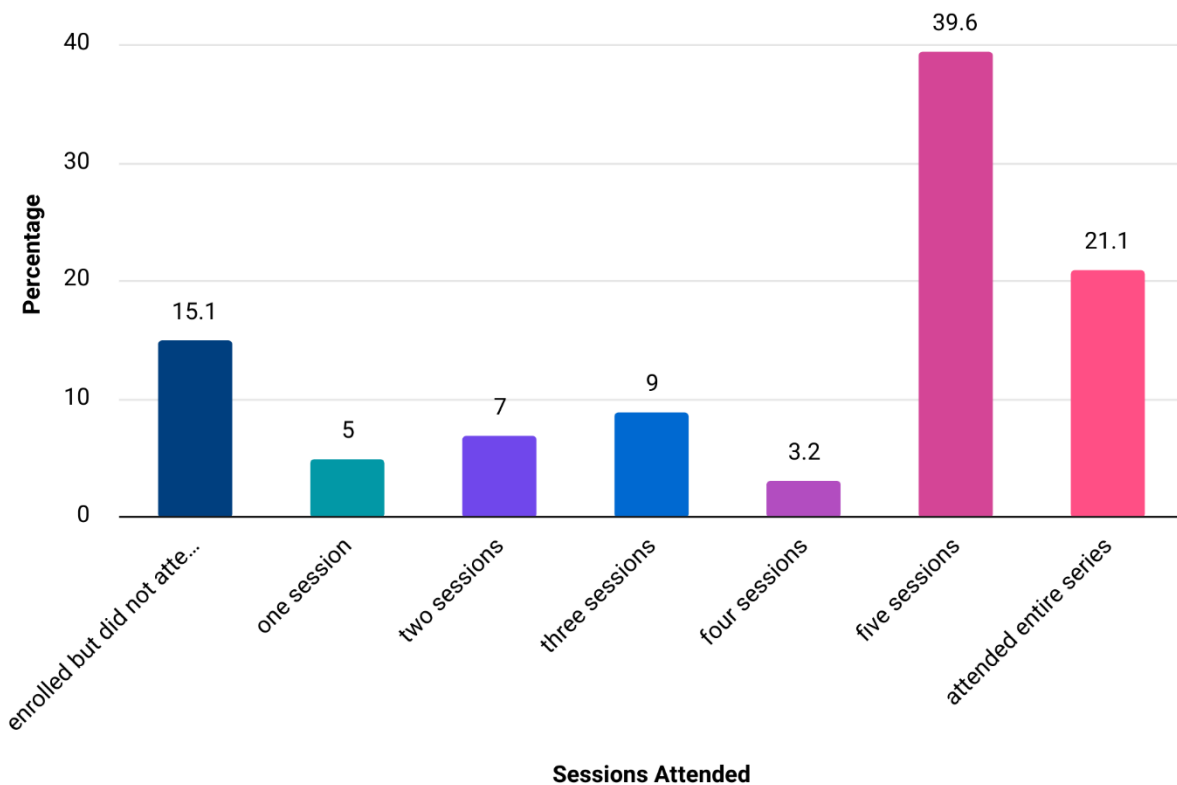
Definitions of Success

Today, DMMS is based loosely on an expeditionary teaching model.³ This model is frequently applied to adventure, outdoor, environment, or experiential education, and is well suited to our own methods and goals. In addition, health literacy is a key component of our efforts.

In the absence of tests and grades, there are limitations in assessing knowledge uptake, thus assessing health literacy improvement is difficult.

From the perspective of exposing the cohort to a variety of disciplines and types of healthcare professionals, our proxy for achievement is the number of sessions attended within any given series. For students attending all sessions, there is a physical, signed certificate of attendance which is mailed to them. For students who attend fewer than the total number of sessions, they must complete a short satisfaction survey, and are then directed to a fillable pdf which they can download and complete for their records. Figure 5 shows aggregate attendance across the last two years by percent.

Figure 5. Attendance Expressed as Percentage of Sessions Attended



For any number of reasons, 15.1% of students who initially registered may not be able to attend the series due to other academic, sports, or family obligations. For that portion of the cohort, we encourage their attendance in a future series through follow up. Another 24.2% of the cohort attended four or fewer sessions. Encouraging results can be seen in the 39.6% of students who attend five sessions and 21.1% who complete the series.

For those students attending five sessions, they are afforded the opportunity to make up the missing sixth session; however, scheduling conflicts and other academic pressures are reported as reasons they do not take advantage of the offer. In addition, certain topics are of no interest to a given portion of the cohort in any given series, which may significantly contribute to missing one session.

Email addresses for all attendees are collected, and program staff follows up with as many students as possible over time. Although it is currently too early to understand the long-term impact of DMMS in directing students toward a career in healthcare or biosciences, results from a follow up survey with past DMMS students since 2009 showed that those who responded did indicate that their participation in the series had an impact on their career decision-making.

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References

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