

## Furthering the One Health Mission:

### Template for Establishing Student-Run One Health Groups on College Campuses.

Halle Fitzgerald, Mugdha Parulekar, Eliana Schach, Gloria Bachmann, MD, MMS

Rutgers Robert Wood Johnson Medical School-Women's Health Institute and members of the NJ One Health Committee

#### Abstract

**Introduction:** Although it has been well-established that animal health and environmental health impact human health, there is a lack of inclusion of One Health in the education of medical and undergraduate students<sup>1</sup>. Most students, in fact, are not aware of the One Health initiative.

**Rationale:** Due to the fundamental lack of One Health knowledge across all involved disciplines but particularly healthcare fields, educating students at the institutional level is desirable to provide early exposure. Education should influence more integrated practice for future citizens, including those in the health professions. **Methods:** A framework for commencing a successful One Health student club is outlined, with steps that include distinguishing the club, writing a Constitution, advertising to students, holding elections, formally establishing the University recognized club and expanding its presence on campus. **Results:** An undergraduate student One Health group at Rutgers University was established, and another one is currently being established at Rutgers Robert Wood Johnson Medical School. Despite the fact that One Health is an established, global initiative, there was a great deal of education necessary to alert students as to what One Health is. Although there also were multiple operational issues that had to be addressed, once commenced at the undergraduate level, it has been a very successful campus initiative. **Discussion:** From the experience at Rutgers University, One Health student groups can be established that further the message of One Health. **Public health implications:** Having a One Health presence at educational institutions via student groups will raise awareness of One Health principles, especially as they relate to public health.

#### Introduction

Four states commenced and now have an ongoing One Health Regional Consortium (Delaware, Maryland, New Jersey and Pennsylvania). One of the initiatives that has been stressed is the education of students about One Health principles. Traditional health care fields have minimized the study of other animals and the environment in the training of future public health professionals and providers; for example, currently, there are only five medical schools that address One Health through student groups or teaching<sup>1</sup>. One of the outcomes from the last One Health Regional Consortium meeting was that the New Jersey Steering Committee took on the initiative for learners to establish a template for creating One Health student groups on campus. Due to the fundamental lack of One Health knowledge across all involved disciplines, educating students at the institutional level is desirable to provide early exposure to One Health ideals and thus inform practice and public health guidelines for future professionals. Therefore, the goals of these student groups are to increase awareness of One Health and instill the idea that people from different areas of study can and should collaborate to improve the environment, overall wellness of all humans and animals and public health outcomes. In addition to educating about One

Health, another goal is to bring together students of different professions to promote collaboration on interdisciplinary projects and to possibly set up a non-credit elective, especially as it relates to medical students.

## **Methods**

### **Undergraduate Club Framework**

The following steps were used to establish a One Health Club at the undergraduate level:

#### ***Distinguishing the Club***

The main challenge of establishing an undergraduate level One Health Club is distinguishing the club from the hundreds of other organizations on campus. Health and environmental organizations are both popular categories. A search of existing organizations was first performed to ensure there was not one already that was too similar in mission. In our research, we found that there were 21 health-related organizations, 13 organizations related to environmental science or conservation efforts, and 3 organizations related to animal science. However, none of them combined these three aspects of One Health into one mission.

#### ***Writing a Constitution***

Next, a Constitution was written in order to outline the pillars that the One Health Club would be based on. The Constitution includes the club's statement of purpose, types of initiatives, membership requirements, voting and running eligibility for executive board. We included the following goals for the club:

1. Raise awareness in the local community about the interconnectedness of human, animal, and environmental health. Many infectious human diseases have an animal origin and these spillovers can be prevented, or their consequences minimized, by better management and preparedness. Human physical and mental health also depends directly on clean air, water, and environment.
2. Educate students about the biological mechanisms that lead to a diseased world by involving them in cross-disciplinary research projects that combine human, animal, and environmental health.
3. Advocate for policies and laws that promote this One Health integrative approach at the community and state level. Departments such as Wildlife, Agriculture, and Health should formally work together in order to streamline responses to health challenges.
4. Foster a network of students from various career paths including veterinary science, environmental science, and pre-medicine to promote One Health values and collaboration across professional fields.

When writing the Constitution, emphasis was made to gear the content to a general audience that is unfamiliar with One Health. It is not sufficient to simply state that human, animal, and environmental health are related. Rather, it was necessary to provide specific examples when outlining the purpose of the club and how certain projects would further the mission.

### ***Outreach to Students***

At Rutgers University New Brunswick, approving a club at the undergraduate level requires some proof of interest beforehand. A preliminary executive board and at least ten members must sign on to the club prior to approval. Even if this is not a requirement at each institution, it is recommended that gauging general interest be done to enable a strong club start. It is also best practice to have members, including the executive board, from the different graduation years be represented to ensure sustainability of the club.

Although there was no centralized method to disseminate information about the club to undergraduate students, channels of communication were identified for students in majors applicable to One Health. The Rutgers Health Professions Office, the School of Environmental and Biological Sciences, and several Living-Learning Communities were included. In this way, pre-medical, pre-veterinary, environmental science, and public health students were alerted. A simple, informative flyer including the mission of the club, contact information, and the timing of the first interest meeting was devised. This flyer was shared via email and through social media group chats.

### ***Holding Elections***

Six leadership positions were identified: President, Vice President, Secretary, Treasurer, Advocacy Chair, and Program Coordinator. Of note are the Advocacy Chair and Program Coordinator positions. The Advocacy Chair is responsible for reaching out to advocacy organizations for partnerships and handling other off-campus communications. The Program Coordinator is responsible for coordinating on-campus events and research initiatives. The elections were held via a Rutgers Qualtrics survey, which enabled confidentiality while preventing double-voting. One addition that is planned is including a Social Media/Marketing Chair position.

### ***Formally Establishing the Club***

A formal application was submitted to the student involvement organization in order to gain approval to become a recognized club.

### ***Expanding Presence on Campus***

Undergraduate institutions are very large and for the club to gain recognition, it is important to broaden horizons and presence on campus. Holding guest speaker events that are open to all students and faculty is a big factor for the club and the initiative to gain more attention. Collaborating with larger well known student organizations at the institution also is key to raise awareness of the One Health initiative as well as recruit new potential members for the club. The club not only wants to facilitate the education of its own members but also to other students on campus. One way we have been forming connections is through our club Instagram account. Through this account we post educational posts about One Health and reach out to other One Health-related organizations. These other organizations then share our posts on their accounts, and we are able to reach a wider audience.

## **Medical School Interest Group and Survey**

At the Medical School level, establishing a student group requires proof of sustainability and student interest due to the much smaller class size than a typical undergraduate student body. A one page proposal was submitted outlining the necessity for an Interest Group with an associated brief literature review as evidence, a chosen faculty advisor, a mission statement, as well as a list of planned activities. This proposal was submitted to the deans and the student government and is now pending.

## **Results**

### **Undergraduate Club**

Within the first two weeks of sending out informational flyers, we received responses from 66 people who were interested in joining the club. Once formed, 40% of the club ran for the six leadership positions. The advantage of interdisciplinarity has already been demonstrated as many club members are connecting with others beyond their major and creating new projects related to public health, economics, and healthcare disparities. None of these members were initially familiar with the concept of One Health, but they were attracted by the interdisciplinary nature of the club.

The One Health Club was approved for provisional status; after demonstrating effective use of funds and sustained interest in the club by at least ten members for one full semester, the full active status will be granted. Since starting in May 2020, the One Health Club has been very active and in addition to seminars by prominent persons in the field, the Club members are actively pursuing projects such as a One Health children's book that simplifies the concept of One Health to elementary school children. The Club also is engaged in a social media campaign, speaking presentations at schools, and a high school scholarship essay contest. For the Medical School Group, there is data collection ongoing at this time to add to the proposal and demonstrate the need for a student group.

## **Discussion**

It is important to educate undergraduate and graduate students about One Health due to the pervasive lack of current information on the topic. It is key to introduce these concepts at the undergraduate level, where students tend to partake in multiple extracurricular organizations and explore diverse areas of study. That is, graduate students, such as medical students tend to be more restricted in their pursuit of extracurriculars due to time constraints and a more focused area of study. Introducing these concepts at an earlier level of education and to a broader scope of learners will lead to more widespread knowledge sharing. This education can then be propagated through graduate schools, medical schools, veterinary schools, masters programs in public health, etc.

When creating the One Health Club at Rutgers University, it proved more difficult to raise awareness of the club due to having education in a virtual format due to COVID-19. Therefore, it was essential to resort to virtual marketing tactics to spread awareness and gain more widespread student recognition. Currently, at the Club, we are planning to add a social media/marketing chair as it is especially important during times of pandemic.

## Public Health Implications

Through One Health, communities and government can collaborate and create effective public health interventions. History has shown us that public health interventions, such as the fortification of grain products with folate in 1998, make the largest impacts on global wellness overall. Making governmental changes will positively impact the health of our environment, animals, and therefore people. Additionally, more people knowing about One Health will change the way that health care for humans and other animals is practiced. These are the reasons for commencing One Health student groups on college campuses.

And of course, One Health plays a large role in the future of global health and specifically in human wellness, most recently evidenced by the development and consequences of COVID-19. Integrating different health disciplines with the public health sector can revolutionize the way that health care is practiced and disease prevention takes place, so that as a society we are better prepared for future local and global disasters.

## Resources

Cheryl Stroud, Bruce Kaplan, Jenae E. Logan & Gregory C. Gray (2016) One Health training, research, and outreach in North America, *Infection Ecology & Epidemiology*, 6:1, DOI: [10.3402/iee.v6.33680](https://doi.org/10.3402/iee.v6.33680)

Rabinowitz, P.M., Natterson-Horowitz, B.J., Kahn, L.H. *et al.* Incorporating one health into medical education. *BMC Med Educ* **17**, 45 (2017). <https://doi.org/10.1186/s12909-017-0883-6>

Lucey, Daniel R., et al. “One Health Education for Future Physicians in the Pan-Epidemic ‘Age of Humans.’” *International Journal of Infectious Diseases*, Elsevier, 22 Aug. 2017, [www.sciencedirect.com/science/article/pii/S1201971217302126](http://www.sciencedirect.com/science/article/pii/S1201971217302126).

Teaching “One Medicine, One Health” Kahn, Laura H. et al. *The American Journal of Medicine*, Volume 121, Issue 3, 169 - 170

Togami, E., J. L. Gardy, G. R. Hansen, G. H. Poste, D. M. Rizzo, M. E. Wilson, and J. A. K. Mazet. 2018. Core Competencies in One Health Education: What Are We Missing? *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC. <https://doi.org/10.31478/201806a>.

---

Copyright (c) 2021 Delaware Academy of Medicine / Delaware Public Health Association.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.