



# INTEGRATION OF EDUCATION, RESEARCH, AND INTER-PROFESSIONAL SKILLS ON INTERNATIONAL HEALTH MISSION TRIPS

*Dean Sutphin, PhD, Susan Meacham, PhD, RDN, D Meisha, DScD, MPH, Brian Hill, PhD,  
Maria Garcia, MURP, Ryan Bolt OMSI, Heather Jones OMSI, Diane Sutphin, MS, Dixie Reynolds, MS  
Post-baccalaureate, International Outreach and Preventive Medicine Programs  
Via College of Osteopathic Medicine, Blacksburg, VA*

## INTRODUCTION

The VCOM mission is to prepare globally minded physicians focused on serving underprivileged populations. VCOM pre-med post-baccalaureate (PB) health mission trips offered transformational experiences for all participants on many levels. The week long experiences were excellent venues for fostering the mission and advancing inter-professional education, research and cultural awareness. Prior to each trip the program director refined the assessment plan. Senior faculty provided expertise in curriculum, agricultural education, nutrition, dentistry/orthodontics, histology/immunology, public health, urban and regional planning, early education, speech, vision, hearing and special education. VCOM admissions, alumni, development and student services staff offered technical assistance. VCOM students brought varying perspectives from previous undergraduate/graduate programs, work and life experiences. VCOM host-country medical staff, nonprofit representatives and interpreters recruited participants and assisted with program implementation. Pre-trip education for post-baccalaureate (PB) students included training on protection of human subjects, data collection, data entry, physical measurements; heights, weights, circum-ferences and vision and hearing screening. PB student groups created learning objectives, instructional methods and materials and evaluation tools for lessons given to school age children on oral health, nutrition, personal hygiene, substance abuse and sexual abuse.

## IMPACT

Between May 2013 and January 2015 six trips were taken to the Dominican Republic, El Salvador, and Honduras. On each trip 7-8 faculty and staff served as preceptors for 20-30 PB students. More than 140 PB students presented education sessions to over 1,000 qualifying and age appropriate host country children, many accompanied by siblings and family members.

## OUTCOMES

VCOM PB students administered pre- and post-tests and confirmed statistically significant improvements in responses to questions. For example, with oral hygiene education children improved their knowledge of circular motion to brush teeth. This improvement was noted during two trips in two different countries with two different PB groups delivering education to multiple groups of children. Statistical significance was not achieved on four other oral hygiene questions on frequency of brushing, baby teeth health, and the effect of oral health on overall health. Likewise, during the same year students delivered and evaluated lessons on nutrition and found significant improvements were not consistent. PB students reported improvements between pre- and post-test responses by El Salvadoran but not Honduran children. With further evaluation PB students reported no differences in El Salvadoran test responses based on gender, teaching environment and interactive vs. non-interactive teaching. Additionally, the intangible benefits were immeasurable as faculty witnessed PB students interacting with children in another country, many speaking another language and adjusting to the many 'distractions' to instruction in each new and challenging physical location.

## OBSERVATIONS

I



II



III



IV



V



VI



VII



VIII



## THE PROCESS IN PICTURES

- I. Administrative, medical and staff team members worked with in-country partners to provide financial support, leadership and logistics after months of organizational planning.
- II. Project objectives were to improve health via nutrition, i.e., discouraging non-nutritive beverages and promoting nutritious diets, safe water and improve water sources. Other units provided education on oral health, personal hygiene, violence prevention and substance abuse.
- III. VCOM established clinics provide medical, dental and pharmacy services and rotation sites for VCOM medical students. Pre-medical students contributed a wide variety of skills from their prior experiences. Upon completing the experience they expressed learning more than anticipated from the international travel and participation in education and community surveys with youth and adults.
- IV. Host country partners identified communities and recruited local participants for each day of activities. Children in triage were measured for height, weight and arm circumferences for nutritional status and completed pre- and post-tests with educational lessons.
- V. Interpreters assisted with household surveys conducted by VCOM teams asking adults about their homes, health and community environmental concerns (food, water, homes, transportation, trash removal, health services and community leadership).
- VI. Participating children included residents of a boy's home next to the Central Americas agricultural experimental farm in Honduras. Children also resided in mountain villages and urban communities.
- VII. The VCOM Institutional Review Board approved protocols and completed audits for the longitudinal study in three countries. The inter-professional health care team and faculty oversaw the required proposals, protocol modifications, and participant signatures on consents, assents and permission forms.
- VIII. The successful implementation of the project depended on the VCOM staff, PB students and VCOM in-country doctors and partners, i.e., Peace Corp, faith-based organizations, and non-profit organizations. The challenging and fun activities emphasized the importance of health care teams and created learning experiences for all.