

## Collrane J. Frivold

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PATH

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### **CAREER SUMMARY**

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Collrane Frivold serves as a Program Associate at PATH in the Devices and Tools Programs' Packaging & Delivery Technologies Portfolio. In that capacity, she contributes to the development of tools and methods that improve the safety, acceptability, and effectiveness of immunization and drug delivery. Ms. Frivold works on a diverse portfolio of delivery and packaging technologies to improve access and coverage to live-saving vaccines and essential medicines including microarray patches, respiratory formulation and delivery, and intradermal-capable technologies utilized for fractional-dose vaccine delivery. Her research informs user-centered product development to advance the development of technologies suitable for use in low-and middle-incomes countries. She also acts as a project manager to ensure successful completion of projects on schedule and within budget. She has an MSPH degree in Global Disease Epidemiology and Control from the Johns Hopkins Bloomberg School of Public Health and prior laboratory experience conducting drug discovery and development research. Ms. Frivold is committed to researching innovations that save lives and improve health in underserved and remote areas, especially through increasing equitable access to vaccines and essential medicines. Her areas of interest and expertise are infectious disease epidemiology, vaccine development, policy, and evaluation.

### **PROFESSIONAL EXPERIENCE**

#### **PATH, Seattle, WA, 2017 to present**

##### Program Associate, Devices and Tools

Within the Packaging & Delivery Technologies Portfolio, conducts literature reviews and compiles summary reports on technical vaccine and pharmaceutical development topics. Gathers and analyzes evidence for comparative economic evaluations to understand health impact as well as commodity and systems costs. Evaluates the technical and programmatic feasibility of vaccine-technology pairings including developing target product profiles. Conducts country evaluations to assess ease of use, acceptability, and programmatic fit of these technologies. Drafts technical and background sections for proposals. Creates and manages project management documents including project timelines, RASCIs, Gantt charts, and project charters to ensure on schedule completion of project activities.

#### **World Health Organization, Geneva, Switzerland, 2016**

##### Intern, Immunization, Vaccines and Biologicals Department

Provided technical assistance to the Strategic Advisory Group of Experts on Immunization (SAGE) in a fast-paced environment including desk/literature research on vaccine and immunization topics. Drafted updated vaccine position papers on tetanus toxoid and measles; used GRADE methodology to evaluate the quality of available evidence to support vaccine policy recommendations. Developed project management skills through building relationships and coordinating the efforts of external experts and stakeholders. Reviewed and edited technical reports and scientific manuscripts.

#### **Witkoppen Health and Welfare Centre, Johannesburg, South Africa, 2016**

#### Intern, Research Department

Developed a costing analysis to compare community- versus clinic-based adherence clubs for stable HIV-infected patients to increase access and adherence to antiretroviral therapy. Carried out interviews with clinic staff to document costs and patient needs. Conducted a clinical file review in REDCap using medical records. Designed educational brochures on health topics for adolescent patients including contraceptive use. Performed data entry, cleaning, and quality control activities.

#### **Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, 2015 to 2016**

##### Graduate Research Associate, Center for Immunization Research

Prepared study materials for phase I/II clinical vaccine trials including EBOV, H7N9, ETEC studies. Compiled and performed data cleaning on clinical responses, virology, adverse events, antibody responses. Created data visualizations of laboratory assay data and immunological responses.

#### **Occidental College, Los Angeles, CA**

##### Undergraduate Researcher, Department of Chemistry, 2013 to 2015

Within an organic synthesis laboratory, researched the development and application of innovative enantioselective methods for the synthesis of biologically and medicinally significant molecules. Contributed to a total synthesis project of DAB-1 and optimized the methods by which it is synthesized. Trained incoming researchers in proper technique and reaction protocols; produced training materials.

##### Student Researcher, Department of Biology, 2014

Studied monoclonal antibody production against *Corynebacterium pseudotuberculosis* in mice to identify proteins that could be viable vaccine targets for an equine vaccine for pigeon fever. Compared the effect of different adjuvants on enhancing the murine antibody response. Analyzed antibody responses after immunization, boosting, and challenge.

#### **National Malaria Control Programme, Antananarivo, Madagascar, 2012 to 2013**

##### Undergraduate Researcher, Epidemiology Unit

Designed a study to evaluate the storage and transport conditions malaria rapid diagnostic tests (RDTs) are exposed to in programmatic use in Madagascar (spent 12-weeks in-country). Evaluated 34 RDT storage areas and examined one 5-day distribution mission. Performed data collection and analyzed temperature and humidity data of RDT storage areas. Research activities included Recruiting participants, administering a questionnaire to healthcare workers, and interviewing RDT experts. Proposed recommendations to improve RDT storage conditions to prolong shelf life and potency.

#### **EDUCATION**

MSPH, International Health, concentration in Global Disease Epidemiology and Control, certificate in Vaccine Science and Policy, certificate in Good Clinical Practice (GCP), Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD, 2017

BA, Biochemistry, minor in Public Health, Occidental College, Los Angeles, CA, 2015

#### **PROFESSIONAL AFFILIATIONS**

Member, Delta Omega Public Health Honor Society, Alpha Chapter, current

Member, American Public Health Association (APHA), current

Member, International Society for Vaccines, current

Member, Phi Beta Kappa, current

Member, Mortar Board National College Senior Honor Society, current

## COUNTRY EXPERIENCE

Madagascar, South Africa, Uganda

## LANGUAGES

Czech-basic, French-conversational

## HONORS and AWARDS

Program in Applied Vaccine Experience (PAVE) Fellowship, 2016  
Global Health Established Field Placement (GHEFP) Award, 2016  
Phi Beta Kappa Graduate Study Award, 2015  
Occidental Honors Scholarship, 2011-2015  
John Stauffer Summer Research Fellowship, 2015  
College Women's Club of Pasadena Scholarship, 2014  
Richter Research Abroad Fellowship, 2013

## SELECTED PUBLICATIONS, PRESENTATIONS, AND ACTIVITIES

C. Frivold, S. McGray, D. Katuntu, F. Bagenda, T. Tran, S. Dao, H. Nguyen, T. Pham, H. Vu, D. Nguyen, K. Phan, D. Le, O. Le, B. Creelman, C. Jarrahian, A. Rein-Weston, E. Saxon, J. Foster, D. Zehrung. *Programmatic and Human Factors Evaluation of three parenteral blow-fill-seal container designs*. Presented at Vaccine Day, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, 2018.

Lead scientific writer. Tetanus vaccines: WHO position paper – February 2017. *Weekly Epidemiological Record*. 2017;92(6):53-76.

C. Frivold, P. Duclos, M. Marti. "Supporting the work of the Strategic Advisory Group of Experts on Immunization (SAGE) within the WHO Immunization Policy Unit." Presented at Vaccine Day, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, 2017.

C. Frivold, C. Hanrahan, M. Mudavanhu, L. Mutunga. "Community-based versus Clinic-based Adherence Clubs: A Costing Analysis." Presented at Global Health Day, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, 2017. Poster was awarded Honorable Mention.

K.R. Talaat, C.J. Luke, K. Chang, C. Frivold, P. Grier, B. Plunkett, W. Sun, R. Adkinson, Z. Chen, H. Jin, K. Coelingh, K. Subbarao. "One or two doses of a live attenuated H7N9 vaccine followed by a dose of an inactivated H7N9 vaccine are immunogenic and well tolerated by healthy adults aged 18-49 years." Presented at Vaccine Day, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, 2016.

A. Sookezian, H. Brown, C. Frivold, D. Deardorff. "Studies on the enantioselective synthesis of DAB-1." Presented at the Occidental College Summer Research Conference, Los Angeles, USA, 2014 & 2015. Presented at the Southern California Conference on Undergraduate Research, Fullerton, USA, 2014.

C. Frivold, K. Thompson. "The reliability of malaria rapid diagnostic tests through the seasons in Madagascar: Could storage conditions affect the efficacy of rapid diagnostic tests?" Presented at the National Conference on Undergraduate Research, Lexington, USA, 2014. Presented at the Richter Research Abroad Conference, Los Angeles, USA, 2013.

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