

# Harry Reyes Nieva, MPhil, MAS, MA

Columbia University Irving Medical Center  
Department of Biomedical Informatics  
622 West 168th Street, PH20  
New York, NY 10032

Email: [harry.reyes@columbia.edu](mailto:harry.reyes@columbia.edu)  
Homepage: <https://www.harryreyesnieva.com>  
Place of Birth: New York, NY, USA

## Education

Columbia University in the City of New York, New York, NY

*Doctor of Philosophy* in Biomedical Informatics, Expected 2024

*Master of Philosophy* in Biomedical Informatics, 2023

*Master of Arts* in Biomedical Informatics, 2021 (GPA: 4.0)

Dissertation Committee: Noémie Elhadad (advisor), Suzanne Bakken, Karthik Natarajan

Coursework includes: Machine Learning for Healthcare, Symbolic AI in Healthcare, Data Science, Natural Language Processing, Computer Applications in Health Care, Intelligent Decision Systems

Beijing Language and Culture University, Beijing, China

北京语言大学, 北京, 中国

*Summer Student*, Intensive Mandarin, 2019

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

*Master of Applied Science* in Spatial Analysis, 2019

Thesis: Spatiotemporal modeling of opioid prescribing and persistent opioid use, 2000-2018

Coursework included: Biostatistics, Spatial Statistics, Epidemiology, Spatial Data Technologies

Harvard T.H. Chan School of Public Health, Boston, MA

*Special Student*, International and Population Health, 2009-2011

Coursework included: Immunology, Tuberculosis, Reproductive Health Issues, Survey Research Methods, Planning and Evaluation of Health Programs, Financing Health Care in Developing Countries

Yale University, New Haven, CT

*Bachelor of Arts* in Sociology and History, 2005

Coursework included: Elements of Computing, Current Issues in Biological Sciences, General Chemistry, Social Policy Analysis, Social Inequality, Portuguese for Spanish Speakers, Elementary Yoruba

## Research Experience

2022-2024	<i>National Institute of Allergy and Infectious Diseases Predoctoral Research Trainee</i> , Department of Biomedical Informatics, Columbia University in the City of New York, New York, NY
2019-2022	<i>National Library of Medicine Predoctoral Research Trainee</i> , Department of Biomedical Informatics, Columbia University in the City of New York, New York, NY
2013-present	<i>Visiting Postgraduate Research Fellow</i> , Department of Medicine, Harvard Medical School, Boston, MA
2013-2019	<i>Predoctoral Research Fellow</i> , Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital, Boston, MA
2012-2019	<i>Research Manager</i> , Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital, Boston, MA
2007-2008	<i>Research Assistant</i> , Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital, Boston, MA
2004	<i>Research Assistant (work study)</i> , Yale University, Department of Sociology, New Haven, CT

## Teaching Experience

Fall 2022	<i>Teaching Assistant</i> , BINF G4008 Interrogating Ethics and Justice in Digital Health, Columbia University, New York, NY
Spring 2022	<i>Preceptor in Clinical Informatics</i> , INTC M7210 Mechanisms and Practice, Columbia Vagelos College of Physicians and Surgeons, New York, NY
Spring 2021	<i>Preceptor in Clinical Informatics</i> , INTC M7210 Mechanisms and Practice, Columbia Vagelos College of Physicians and Surgeons, New York, NY
Fall 2020	<i>Teaching Assistant</i> , BINF G4011 Acculturation to Medicine & Clinical Informatics, Columbia University, New York, NY
Summer 2017	<i>Teaching Fellow</i> , HPM 299 Research with Large Databases, Harvard T.H. Chan School of Public Health, Boston, MA
Summer 2016	<i>Teaching Fellow</i> , HPM 299 Research with Large Databases, Harvard T.H. Chan School of Public Health, Boston, MA
2005–2006	<i>Teacher, English-as-a-Second-Language</i> , New York City Board of Education/New York City Teaching Fellows, New York, NY

## Committee Service

2023	<i>Outreach Committee</i> , Machine Learning for Health (ML4H) co-located with NeurIPS
2023	Author Mentorship Sub-Chair
2021–present	<i>Diversity, Equity, and Inclusion Working Group</i> , Department of Biomedical Informatics, Columbia University
	2021–present Founding Member
2021–2022	<i>Toward Diversity, Equity, and Inclusion in Informatics, Health Care, and Society Seminar Series Planning Committee</i> , Columbia University
	2021–2022 Founding Member
2020–2022	<i>Biomedical Informatics Departmental Seminar Series Planning Committee</i> , Columbia University
	2020–2022 Member
2019–2021	<i>Electronic Health Record Phenotyping Working Group</i> , Columbia University
	2019–2021 Member
2015–2018	<i>Partners Sexual Orientation and Gender Identity Working Group</i>
	2015–2018 Founding Member
2015–2016	<i>Brigham Health Equity and Diversity Council</i>
	2015–2016 Founding Member
	2015–2016 Co-Chair, Data Working Group
2013–2015	<i>Partners eCare Research Working Group</i>
	2013–2015 Member
2013–2015	<i>Partners eCare Sexual Orientation and Gender Identity Working Group</i>
	2013–2015 Founding Member
2013–2014	<i>Partners Human Research Committee, Insight Usability Working Group</i>
	2013–2014 Member
2013–2014	<i>Partners Enterprise Research Portal Working Group</i>
	2013–2014 Member
2011–2019	<i>Brigham Health LGBTQ and Allies Employee Resource Group</i>
	2011–2019 Member
	2014–2016 Co-Chair
2007–2008	<i>Association of Multicultural Members of Partners Healthcare</i>
	2007–2008 Member
	2007–2008 Vice-Chair, Brigham and Women's Hospital Chapter

## Professional Organizations and Societies

- 2023–present *Member*, Society for Advancement of Chicanos/Hispanics & Native Americans in Science
- 2023–present *Treasurer*, Columbia University Chapter
- 2022–present *Member*, Association for the Advancement of Artificial Intelligence
- 2022–present *Member*, Association for Computational Linguistics
- 2020–present *Member*, Latinx in AI
- 2019–present *Member*, New York Academy of Sciences
- 2017–present *Member*, Association for Computing Machinery
- Special Interest Groups: Artificial Intelligence; Biomedical Informatics; High Performance Computing; Knowledge Discovery in Data
- 2014–present *Member*, American Medical Informatics Association
- Special Interest Groups: Knowledge Discovery and Data Mining, Natural Language Processing, Global Health Informatics, Public Health Informatics
- 2014–present *Abstract Reviewer*, Annual Symposium
- 2012–2014 *Member*, American Public Health Association
- Special Interest Groups: Medical Care, Health Informatics Information Technology

## Editorial Activities

### *Ad hoc Reviewer*

- |                                      |   |
|--------------------------------------|---|
| Applied Clinical Informatics         | Journal of Medical Internet Research                    |
| Health Services Research             | Journal of the American Medical Informatics Association |
| JAMA Network Open                    | Medical Care  |
| Journal of Biomedical Informatics    | Natural Language Engineering                            |
| Journal of General Internal Medicine | Open Forum Infectious Diseases                          |

### *Other Editorial Roles*

- 2021–2023 *Journal of the American Medical Informatics Association*
- 2021–2023, *Student Editorial Board Member*
- 2022–2023, *Journal Club Manager*

## Honors and Prizes

- 2022–2024 *National Institute of Allergy and Infectious Diseases (NIAID) Predoctoral Research Training Fellowship*, National Institutes of Health (NIH)
- 2021–2024 *Computational and Data Science Fellowship*, Association for Computing Machinery (ACM)
- Special Interest Group in High Performance Computing (SIGHPC)
- 2021–2023 *Hope Scholarship*, Biomedical Science Careers Program, Harvard Medical School
- 2021–2022 *HSF Scholar*, Hispanic Scholarship Fund (HSF)
- 2019–2024 *National Library of Medicine (NLM) Predoctoral Research Training Fellowship*, National Institutes of Health (NIH)
- 2019 *Dean's Fellowship*, Columbia University Vagelos College of Physicians and Surgeons
- 2018 *Ford Foundation Predoctoral Fellowship*, Honorable Mention, National Academies of Sciences, Engineering, and Medicine
- 2018 *Partners in Excellence Award for Leadership and Innovation*, Partners HealthCare
- 2018 *Ruth and William Silen MD Award, Third Prize*, New England Science Symposium
- 2017 *Travel Scholarship*, The Open Gate, Harvard Gender & Sexuality Caucus
- 2016–2018 *Merit Scholarship*, Johns Hopkins Bloomberg School of Public Health
- 2016 *LGBTQ Leadership Award*, Brigham Health
- 2015 *Brigham Way honoree*, Brigham and Women's Hospital
- 2014 *Partners in Excellence Award for Quality Treatment and Service*, Partners HealthCare
- 2014 *Outstanding Quality & Patient Safety Oral Presentation*, Society of General Internal Medicine
- 2012 *Partners in Excellence Award for Leadership and Innovation*, Partners HealthCare
- 2004 *Mellon Forum Undergraduate Thesis Research Funding Award*, Yale University

## Report of Funded and Unfunded Projects

### Funding Information

#### Past

- 2018–2019 *A Multicenter Randomized Controlled Trial of Pharmacist-Directed Transitional Care to Reduce Post-Hospitalization Utilization*  
National Institute on Aging (NIA) R01 AG 058911-01  
Project Manager (Site PI: Schnipper)  
Aim: To measure the impact of pharmacist-led discharge (PHARM-DC) interventions on post-discharge utilization within 30 days. We will also identify patient sub-populations most likely to benefit from PHARM-DC.
- 2017–2018 *Novel electronic health record phenotyping of LGBTQ intersectional identities and associated health disparities using natural language processing and machine learning*  
Harvard Catalyst  
Co-Investigator (PI: Zhou)  
Aim: Develop methods using machine learning and natural language processing to address logistical challenges in obtaining representative samples of sexual and gender minority (SGM) populations and characterize comorbidity prevalence and potential health inequities associated with different segments of SGM populations.
- 2016–2018 *Electronic Medication Adherence Reporting and Feedback During Care Transitions (Smart Pillbox)*  
Agency for Healthcare Research and Quality (AHRQ) R21 HS 024587-01  
Project Manager/Statistical Programmer (PI: Schnipper)  
Aim: To implement a smart pillbox intervention for patients discharged from the hospital to the community and to evaluate the effects of the intervention on post-discharge medication discrepancies, medication adherence, and chronic disease management.
- 2015–2018 *Implementation of a Medication Reconciliation Protocol to Improve Patient Safety*  
Agency for Healthcare Research and Quality (AHRQ) R18 HS 023757-01A1  
Project Manager/Statistical Programmer (PI: Schnipper)  
Aim: The long-term objective of this research is to widely disseminate, implement, and evaluate sustainable medication reconciliation interventions that improve patient safety during care transitions.
- 2015–2017 *Clinician-Patient Relationships: Boundaries, Barriers, Breakdowns*  
Gold Foundation/Lucian Leape Family Foundation  
Project Director (PI: Schiff)  
Aim: This study examines physician attitudes and practices related to caring acts that have been questioned as “inappropriate” or “unethical” crossing of professional boundaries.
- 2014–2016 *Understanding and Preventing Diagnostic Pitfalls*  
Risk Management Foundations of the Harvard Medical Institutions (CRICO)  
Project Director (PI: Schiff)  
Aim: The goal of this project is to identify leading diagnostic pitfalls that pose safety and malpractice risks, then design and test the accuracy of electronic screens for these pitfalls in the electronic health record.
- 2014–2016 *Evaluating Variation in Overactive Bladder Medication Use and Other Treatments*  
Astellas Pharma US, Inc.  
Statistical Programmer (PI: Loughlin)  
Aim: Characterize overactive bladder treatment, medication adherence, and outcomes.

- 2014–2015 *Are Physicians and Patients Adhering to the Published Guidelines for Fasting during Ramadan?*  
Martin P. Solomon Award for Primary Care Scholarship, BWH  
Co-Investigator (PI: Ali)  
Aim: To measure differences in rates of health care utilization for Muslim patients just prior to, during, and after Ramadan.
- 2014 *First Annual BWH DGIM Research Day*  
BRI/ORC Microgrant Pilot Program  
Principal Investigator (\$1,000)  
Aim: Develop BWH Division of General Internal Medicine and Primary Care retreat to showcase contributions of research assistants and promote their career development.
- 2013–2015 *Patient Outcomes Associated with Year-End Departure of Resident Primary Care Physicians*  
Support for Excellence in Educational Development (SEED) Grant, BWH  
Co-Investigator (PI: Solomon)  
Aim: To investigate whether acute care utilization is increased disproportionately among patients of graduating resident physicians compared to non-graduating residents.
- 2013–2014 *Acute Respiratory Infection Telephone Management Service*  
Brigham and Women's Physicians Organization Care Redesign Incubator and Startup Program – Round 1 and Round 2  
Data Manager (PI: Linder)  
Aim: To develop, implement, and evaluate an acute respiratory infection telephone management service at one of the Brigham and Women's Primary Care Practices.
- 2012–2014 *Medical Malpractice and Patient Safety Protocol (PROMISES)*  
Agency for Healthcare Research and Quality (AHRQ) 1R18HS019508-01  
Project Manager (PI: Schiff)  
Aim: To test the impact of quality improvement techniques to accomplish innovations and improvements in 3 high risk ambulatory malpractice areas: 1) medication management, 2) test ordering and results management 3) follow-up and referral management.
- 2012–2014 *Use of Behavioral Economics to Improve Treatment of Acute Respiratory Infections*  
National Institutes of Health/University of Southern California 1RC4AG039115-01  
Data Manager/Statistical Programmer (Site PI: Linder)  
Aim: To evaluate the use of behavioral economic concepts such as enhanced defaults, alternative options, and social norms on inappropriate antibiotic prescribing for acute respiratory infections.
- 2010–2012 *President's Emergency Plan for AIDS Relief (PEPFAR)*  
Health Resources and Services Administration (HRSA) U51HA02522  
Data Quality Assurance Manager (PI: Kanki)  
A \$362 million grant for work in Nigeria, Botswana, and Tanzania to train health care workers, develop monitoring and evaluation systems, strengthen health care infrastructures, and collaborate with local hospitals and clinics that provide treatment for patients living with HIV/AIDS.
- 2008–2010 *President's Emergency Plan for AIDS Relief (PEPFAR)*  
Health Resources and Services Administration (HRSA) U51HA02522  
Data, Training, and Education Coordinator (PI: Kanki)  
A \$362 million grant for work in Nigeria, Botswana, and Tanzania to train health care workers, develop monitoring and evaluation systems, strengthen health care infrastructures, and collaborate with local hospitals and clinics that provide treatment for patients living with HIV/AIDS.

- 2007–2008 *Pharmacist Intervention to Decrease Medication Errors in Heart Disease Patients (PILL-CVD)*  
National Heart, Lung, and Blood Institute (NHLBI), Ro1HL089755  
Research Assistant (Site PI: Schnipper)  
Aim: To evaluate a literacy-focused program that provides educational assistance from pharmacists at the time of hospital discharge to people hospitalized with heart problems.
- 2007 *Influenza in the Partners Primary Care Practice-Based Research Network*  
Roche Laboratories, RLI 06001207  
Research Assistant (PI: Linder)  
Aim: To measure and evaluate antiviral and antibiotic prescribing for patients with influenza being treated in primary care clinics.

### *Projects Submitted for Funding*

- 2021 *Financial Toxicity and Cancer Treatment: Examining Trends and Disparities via Causal Inference*  
Robert Wood Johnson Foundation/AcademyHealth HD4A Award  
Co-Principal Investigator (PI: Elhadad)  
Aim: Apply state-of-the-art machine learning, natural language processing, and causal inference methods to a large, longitudinal cohort to isolate factors contributing to financial toxicity following cancer diagnosis. We will identify and quantify disparities in clinical and catastrophic financial outcomes, enabling policymakers and providers to prioritize targeted interventions most likely to reduce financial toxicity while mitigating disparities in clinical outcomes among different demographic and socioeconomic groups.
- 2018 *Artificial Intelligence for the Study and Enhancement of Sexual and Gender Minority health*  
NIH/NIMHD 1R21HD097292-01  
Co-investigator (PI: Zhou)  
Aim: The goals of the ARISE-SGM (ARtificial Intelligence for the Study and Enhancement of Sexual and Gender Minority health) research project are to leverage advances in artificial intelligence to address logistical challenges in obtaining representative samples of sexual and gender minority (SGM) populations and characterize comorbidity prevalence and potential health inequities associated with different segments of SGM populations.

## Report of Invited Teaching and Presentations

No presentations below were sponsored by outside entities.

### *Local*

- 2023 *Development and Validation of Multimodal Deep Learning Models to Identify Human Monkeypox in the Electronic Health Record.*  
Division of Infectious Diseases, Columbia University Irving Medical Center, New York, NY.
- 2023 *Health Information Exchange Enables Enhanced STI Surveillance Using Electronic Health Record Data.*  
Division of Infectious Diseases, Columbia University Irving Medical Center, New York, NY.
- 2022 *Mining the Health Disparities and Minority Health Bibliome.*  
Biomedical Informatics Seminar Series  
Department of Biomedical Informatics, Columbia University
- 2020 *Health Equity and Informatics*  
Guest Lecturer, BINF G4011: Acculturation to Medicine and Clinical Informatics,  
Department of Biomedical Informatics, Columbia University
- 2019 *LGBTQ Health - Diversity, Culture, and Inclusion Series*  
Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital

- 2018 *Documentation of Sexual Orientation and Gender Identity in the Electronic Health Record*  
Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital
- 2017 *Algorithmic Bias and Health Disparities*  
Machine Learning Working Group, Partners HealthCare
- 2017 *Improving and Leveraging Sexual Orientation and Gender Identity Demographics in Epic*  
Sexual Orientation and Gender Identity Working Group, Partners HealthCare
- 2014 *Designing and Building Clinical Research Databases*  
Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital
- 2014 *SQL-based Data Management and Manipulation*  
Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital
- 2014 *The LGBTQ Data Collection Gap: Sexual Orientation and Gender Identity in the EHR*  
LGBTQ and Allies Employee Resource Group, Brigham Health
- 2013 *How Busy Clinicians Can Improve Care and Pursue Scholarship*  
Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital

### Regional

- 2023 *Getting into Graduate School and Succeeding/Panel.*  
New England Science Symposium, Biomedical Science Careers Program, Boston, MA
- 2022 *Mining the health disparities and minority health bibliome: a computational scoping review and gap analysis of 200,000+ articles.*  
Biomedical Informatics Colloquium, New York City College of Technology (City Tech),  
City University of New York (CUNY), New York, NY
- 2016 *Identifying and Understanding Malpractice-Prone Diagnostic Pitfalls*  
Risk Management Foundation of the Harvard Medical Institutions Incorporated (RMF),  
CRICO Research Day. Boston, MA

### International

- 2011 *Introduction to Data Management/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Critical Elements in Database Cleaning, a Checklist/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Basics of Programming and Scripting/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Monitoring data and Trouble-shooting/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Programming: Creating a Utility and Basics of Scripting/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Programming and Trouble-shooting Databases/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Cohort Analyses I: Using EHR Data/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2011 *Cohort Analyses II: Using EHR Data/Seminar*  
AIDS Prevention Initiative Nigeria Plus (APIN Plus), Abuja, Nigeria
- 2009 *Improving Understanding and Medication Adherence/Podium Presentation*  
HIV Counselor Training, AIDS Prevention Initiative Nigeria (APIN), Abuja, Nigeria

## Report of Clinical Activities and Innovations

### Software and Data

- 2022 *HDMH Monitor* / Principal developer  
<https://hdmhmonitor.dbmi.columbia.edu/>  
HDMH Monitor is an online article repository and interactive dashboard that leverages natural language processing and machine learning methods to support scientific discovery via automated archive, search, information synthesis, and data visualization of articles concerning health disparities and minority health (HDMH) in MEDLINE.
- 2022 *C-REACT: Contextualized Race and Ethnicity Annotations for Clinical Text* / Co-developer  
The C-REACT dataset is a large publicly-available corpus of sentences from clinical notes manually annotated for information related to race and ethnicity (RE). This corpus contains two sets of gold-standard annotations for RE data. The first set contains granular RE-information such as patient country of origin and spoken language. The second set of annotations contains RE labels manually assigned by clinicians. This corpus is intended to improve understanding about granular information related to RE contained within the clinical note and how this information might be used to infer RE.
- 2020 *CovidWatcher* / Co-developer  
<https://covidwatcher.dbmi.columbia.edu/>  
CovidWatcher is an app and online portal that surveys users about their COVID-19 exposure, symptoms, access to medical care, and impact on daily life. The data collected is used to track the spread of COVID-19, giving citizens real-time information about hot spots and enabling health care officials to deploy resources where needed most.
- 2011 *Electronic health record (EHR) data quality assessment tool, version 2.0* / Co-developer  
Instituted major modifications to and evaluated a pre-existing EHR utility to incorporate expanded data quality indicators at 33 Harvard PEPFAR sites in Nigeria. With this utility, central and site-level data managers are able to better monitor and improve data completeness, validity, accuracy, and currency.
- 2011 *EHR pediatric quality improvement tool* / Co-developer  
Co-developed and evaluated a utility to extract information from data warehouse and generate measures based on 23 pediatric quality of care indicators at 33 Harvard PEPFAR sites in Nigeria. Programmed module to review continuity of care, drug therapy initiation, medication adherence, loss to follow-up, laboratory monitoring, disease screening based on clinical symptoms assessment or diagnostic evaluation, treatment failure, toxicity management, nutritional assessment, and treatment response.
- 2010 *EHR adult quality improvement tool* / Co-developer  
Co-developed and evaluated a utility to extract information from data warehouse and generate measures based on 15 adult quality of care indicators at 33 Harvard PEPFAR sites in Nigeria. Module reviews continuity of care, drug therapy initiation, loss to follow-up, laboratory monitoring, disease screening based on clinical symptoms assessment, treatment failure, and treatment response.



## Report of Education of Patients and Service to the Community

- 2023-present *Biomedical Science Careers Program* / Educational Relief Fund Review Committee Member  
The Educational Relief Fund provides financial support to BSCP students and fellows whose education is impacted by unexpected roadblocks and hardship.
- 2019 *High School Scholars Program, American Medical Informatics Association/Mentor*  
Supported high school students with research projects; reviewed their work and helped them practice scientific presentations; offered career advice and encouragement.
- 2018 *Queer Health Hackathon/Co-organizer*  
Co-organized 3-day collaborative event to convene software engineers, data scientists, and clinical experts to examine longitudinal clinical database for potential LGBTQ health disparities. Extracted and transformed/de-identified EHR data from health system enterprise data warehouse; loaded on Amazon Web Services Cloud platform.
- 2013-2016 *Human Rights Commission, City of Cambridge/Commissioner, Vice Chair*  
Adjudicated complaints of discrimination occurring in Cambridge, Massachusetts related to housing, employment, education, and public accommodation. Facilitated conciliations to settle disputes among parties. Conducted information sessions on civil rights.
- 2006-2016 *Boston Medical Reserve Corps/Emergency Medical Technician*  
The Boston Medical Reserve Corps is a group of volunteers who are ready to respond should there be a public health emergency in Boston.
- 2007 *Timmy Global Health, Dominican Republic/Medical Relief Volunteer*  
Helped establish temporary medical clinics along Haiti-Dominican Republic border; triaged patients, managed pharmacy, translated proper drug use and application.
- 2001-2005 *Latino Youth Enrichment Team (LYET), New Haven, CT/Co-Director*  
Managed community center mentorship program and developed instructional methods for Latino youth ranging in age from 6 through 13.

## Report of Scholarship

### Publications

#### Manuscripts under peer review

1. **Reyes Nieva H**, Bakken S, Elhadad N. Mining the Health Disparities and Minority Health Bibliome: A Computational Scoping Review and Gap Analysis of 200,000+ Articles. medRxiv 2023.10.17.23296754;
2. Tucker EG, **Reyes Nieva H**, Yin MT, Castor D, Gordon P, Elhadad N, Zucker J. Using a Health Information Exchange to Characterize Changes in HIV Viral Load Suppression and Disparities During the COVID-19 Pandemic in NYC.
3. Sun TY, **Reyes Nieva H**, Altosaar J, Cheng RJ, Natarajan K, Sena A, Chinthala L, Dorr DA, Benton ES, Liu F, Zai HS, Gerber BS, Gillberg J, Callahan A, Petucci J, Ryan PB, Madlock-Brown C, Weiskopf N, Elhadad N. Large-Scale Characterization of Diagnosis Prevalence by Race, Gender, and Age across All Disease Chapters: A Cross-Sectional Study.
4. Sun TY, Hardin J, **Reyes Nieva H**, Natarajan K, Cheng RJ, Ryan PB, Elhadad N. Large-scale characterization of gender differences in diagnosis prevalence and time to diagnosis. medRxiv 2023.10.12.23296976;
5. Bear Don't Walk OJ IV, Pichon A, **Reyes Nieva H**, Sun T, Altosaar J, Joseph J, Kinberg S, Richter LR, Crusco S, Kulas K, Ahmed SA, Snyder D, Rahbari A, Ranard BL, Juneja P, Demner-Fushman D, Elhadad N. C-REACT, Two Sets of Gold-standard Annotations for Race and Ethnicity in Clinical Notes from MIMIC-III.

### Peer reviewed publications in print or other media

1. Bear Don't Walk OJ IV, Pichon A, **Reyes Nieva H**, Sun T, Altosaar J, Natarajan K, Perotte A, Demner-Fushman D, Elhadad N. Auditing Learned Associations in Deep Learning Approaches to Extract Race and Ethnicity from Clinical Text. *AMIA Annu Symp Proc*. 2023. In press.
2. Spotnitz M, Acharya N, Cimino JJ, Murphy S, Namjou B, Crimmins N, Walunas T, Liu C, Crosslin D, Benoit B, Rosenthal E, Pacheco J, Ostroplets A, **Reyes Nieva H**, Patterson JS, Richter LR, Callahan TJ, Elhussein A, Pang C, Kiryluk K, Nestor J, Khan A, Mohan S, Minty E, Chung W, Wei WQ, Natarajan K, Weng C. A metadata framework for electronic phenotypes. *JAMIA Open*. 2023 Jul; 6(2):ooado32. PMID:37181728
3. Schnipper JL, **Reyes Nieva H**, Yoon C, Mallouk M, Mixon AS, Rennke S, Chu ES, Mueller SK, Smith GR, Williams MV, Wetterneck TB, Stein JM, Dalal A, Labonville S, Sridharan A, Stollendorf D, Orav J, Levin B, Gresham M, Goldstein J, Platt S, Nyenpan C, Howell E, Kripalani S, and MARQUIS2 Site Leaders for the MARQUIS2 Study Group. What Works in Medication Reconciliation: An On-Treatment and Site Analysis of the MARQUIS2 Study. *BMJ Qual Saf*. 2023 Aug;32(8):457-469. PMID:36948542.
4. Shahani A, **Reyes Nieva H**, Czado K, Shannon E, Gaetani R, Gresham M, Cruz Garcia J, Ganesan H, Cerciello E, Dave J, Jain R, Schnipper JL. An Electronic Pillbox Intervention Designed to Improve Medication Safety During Care Transitions: Challenges and Lessons Learned regarding Implementation and Evaluation. *BMC Health Serv. Res*. 2022;22(1):1304. PMID:36309744.
5. Bear Don't Walk OJ IV, **Reyes Nieva H**, Lee SSJ, Elhadad N. A Scoping Review of Ethics Considerations in Clinical Natural Language Processing. *JAMIA Open*. 2022;5(2):ooaco39. PMID:35663112.
6. Schiff GD, Volodarskaya M, Ruan E, Lim A, Wright A, Singh H, **Reyes Nieva H**. Characteristics of Disease-Specific and Generic Diagnostic Pitfalls: A Qualitative Study. *JAMA Netw Open*. 2022;5(1):e2144531. PMID:35061037.
7. Groisser A, **Reyes Nieva H**, Wright A, Ruan E, Schiff GD. Terminations in Primary Care: A Retrospective Observational Study of 16 Primary Care Clinics. *J Gen Intern Med*. 2022;37(3):548-555. PMID:33948801.
8. Chaplin B, Agbaji O, **Reyes Nieva H**, Olatunde B, Chang C, Mitruka K, Sule H, Dajel T, Zee A, Ahmed ML, Ahmed I, Okonkwo P, Rawizza H, Kanki P. The Timeliness of Point of Care Viral Load Results Improves HIV Monitoring in Nigeria. *Clin. Infect. Dis*. 2023 Feb 8;76(3):e671-e680. PMID:35872644.
9. Schnipper JL, **Reyes Nieva H**, Mallouk M, Mixon AS, Rennke S, Chu ES, Mueller SK, Smith GR, Williams MV, Wetterneck TB, Stein JM, Dalal A, Labonville S, Sridharan A, Stollendorf D, Orav J, Levin B, Gresham M, Yoon C, Goldstein J, Platt S, Nyenpan C, Howell E, Kripalani S, and MARQUIS2 Site Leaders for the MARQUIS2 Study Group. Effects of a Refined Evidence-based Toolkit and Mentored Implementation on Medication Reconciliation Quality and Safety at Eighteen Hospitals: Results of the MARQUIS2 Quality Improvement Study. *BMJ Qual Saf*. 2022 Apr;31(4):278-286. PMID:33927025.
10. Kraemer KM, Litrownik D, Moy ML, Wayne PM, Beach D, Klings ES, **Reyes Nieva H**, Pinheiro A, Davis RB, Yeh GY. Exploring tai chi exercise and mind-body breathing in patients with COPD in a randomized controlled feasibility trial. *COPD*. 2021;18(3):288-298. PMID:34106027.
11. Yeh GY, Litrownik D, Wayne PM, Beach D, Klings ES, **Reyes Nieva H**, Pinheiro A, Davis RB, Moy ML. The BEAM Study (Breathing, Education, Awareness, Movement): a Randomized Controlled Feasibility Trial of Tai Chi Exercise in Patients with COPD. *BMJ Open Respiratory Research*. 2021; 18(3):288-298. PMID:33219007.

12. Sun TY, Bear Don't Walk OJ IV, Chen J, **Reyes Nieva H**, Elhadad N. Exploring Gender Disparities in Time to Diagnosis. *Machine Learning for Health (ML4Health) Workshop at the Conference on Neural Information Processing Systems (NeurIPS)*; 12/2020. arXiv:2011.06100.
13. **Reyes Nieva H**, Ruan E, Schiff G. Professional-Patient Boundaries: a National Survey of Primary Care Physicians' Attitudes and Practices. *J Gen Intern Med.* 2020;35(2):457-464. PMID:31755012.
14. Linder JA, Weissman JS, **Reyes Nieva H**, Lipsitz S, Haring RS, DeAngelis J, Kristy RM, Loughlin KR. Overactive bladder in an integrated delivery system: a longitudinal cohort study. *BMC Health Serv Res.* 2020; 20(1):447. PMID:32434511.
15. Ali NB, **Reyes Nieva H**, Percac-Lima S, Shields HM, Linder JA, Yusuf Osman N. Health Care Utilization by Muslim Patients During Ramadan. *J Health Care Poor Underserved.* 2019;30(4):1360-1372. PMID:31680102.
16. Mixon AS, Smith GR, Mallouk M, **Reyes Nieva H**, Kripalani S, Rennke S, Chu E, Sridharan A, Dalal A, Mueller S, Williams M, Wetterneck T, Stein JM, Stollendorf D, Howell E, Orav J, Labonville S, Levin B, Yoon C, Gresham M, Goldstein J, Platt S, Nyenpan C, Schnipper JL. Design of MARQUIS2: study protocol for a mentored implementation study of an evidence-based toolkit to improve patient safety through medication reconciliation. *BMC Health Serv Res.* 2019 Sep 11; 19(1):659. PMID:31511070.
17. Schiff GD, **Reyes Nieva H**, Griswold P, Leydon N, Ling J, Federico F, Keohane C, Ellis BR, Foscett C, Orav EJ, Yoon C, Goldmann D, Weissman JS, Bates DW, Biondolillo M, Singer SJ. Randomized Trial of Reducing Ambulatory Malpractice and Safety Risk: Results of the Massachusetts PROMISES Project. *Med Care.* 2017 08; 55(8):797-805. PMID:28650922.
18. Schiff GD, **Reyes Nieva H**, Griswold P, Leydon N, Ling J, Biondolillo M, Singer SJ. Addressing Ambulatory Safety and Malpractice: The Massachusetts PROMISES Project. *Health Serv Res.* 2016 12; 51 Suppl 3:2634-2641. PMID:27892623.
19. Kroll DS, **Reyes Nieva H**, Barsky AJ, Linder JA. Benzodiazepines are Prescribed More Frequently to Patients Already at Risk for Benzodiazepine-Related Adverse Events in Primary Care. *J Gen Intern Med.* 2016 09; 31(9):1027-34. PMID:27177914.
20. Bell SP, Schnipper JL, Goggins K, Bian A, Shintani A, Roumie CL, Dalal AK, Jacobson TA, Rask KJ, Vaccarino V, Gandhi TK, Labonville SA, Johnson D, Neal EB, Kripalani, PILL-CVD Study Group\*. Effect of Pharmacist Counseling Intervention on Health Care Utilization Following Hospital Discharge: A Randomized Control Trial. *J Gen Intern Med.* 2016 May; 31(5):470-7. (\*member of the investigative team cited in the appendix of the manuscript) PMID:26883526.
21. Solomon SR, Gooding HC, **Reyes Nieva H**, Linder JA. Acute Care Utilization by Patients After Graduation of Their Resident Primary Care Physicians. *J Gen Intern Med.* 2015 Nov; 30(11):1611-7. PMID:25896089.
22. Singer SJ, **Reyes Nieva H**, Brede N, Ling J, Leydon N, Weissman JS, Goldmann D, Griswold P, Yoon C, Orav EJ, Bates DW, Biondolillo M, Schiff GD. Evaluating ambulatory practice safety: the PROMISES project administrators and practice staff surveys. *Med Care.* 2015 Feb; 53(2):141-52. PMID:25464161.
23. Chaplin B, Meloni S, Eisen G, Jolayemi T, Banigbe B, Adeola J, Wen C, **Reyes Nieva H**, Chang C, Okonkwo P, Kanki P. Scale-up of networked HIV treatment in Nigeria: creation of an integrated electronic medical records system. *Int J Med Inform.* 2015 Jan; 84(1):58-68. PMID:25301692.
24. Linder JA, Doctor JN, Friedberg MW, **Reyes Nieva H**, Birks C, Meeker D, Fox CR. Time of day and the decision to prescribe antibiotics. *JAMA Intern Med.* 2014 Dec; 174(12):2029-31. PMID:25286067.

25. **Reyes Nieva H**, Doctor JN, Friedberg MW, Birks C, Fiskio JM, Volk LA, Linder JA. "Comparing Clinicians' Perception of Their Own and Their Peers' Antibiotic Prescribing to Actual Antibiotic Prescribing for Acute Respiratory Infections in Primary Care" in Abstracts from the 37th Annual Meeting of the Society of General Internal Medicine. *J Gen Intern Med*. 2014 Apr;29 Suppl 1(Suppl 1): 55. PMID: 24737224.
26. Schiff G, Griswold P, Ellis BR, Puopolo AL, Brede N, **Reyes Nieva H**, Federico F, Leydon N, Ling J, Wachenheim D, Leape LL, Biondolillo M. Doing right by our patients when things go wrong in the ambulatory setting. *Jt Comm J Qual Patient Saf*. 2014 Feb; 40(2):91-6. PMID:24716332.
27. Kripalani S, Roumie CL, Dalal AK, Cawthon C, Businger A, Eden SK, Shintani A, Sponsler KC, Harris LJ, Theobald C, Huang RL, Scheurer D, Hunt S, Jacobson TA, Rask KJ, Vaccarino V, Gandhi TK, Bates DW, Williams MV, Schnipper JL, PILL-CVD Study Group\*. Effect of a pharmacist intervention on clinically important medication errors after hospital discharge: a randomized trial. *Ann Intern Med*. 2012 Jul 03; 157(1):1-10. (\*member of the investigative team cited in the appendix of the manuscript) PMID:22751755.
28. Schnipper JL, Roumie CL, Cawthon C, Businger A, Dalal AK, Mugalla I, Eden S, Jacobson TA, Rask KJ, Vaccarino V, Gandhi TK, Bates DW, Johnson DC, Labonville S, Gregory D, Kripalani S, PILL-CVD Study Group\*. Rationale and design of the Pharmacist Intervention for Low Literacy in Cardiovascular Disease (PILL-CVD) study. *Circ Cardiovasc Qual Outcomes*. 2010 Mar; 3(2):212-9. (\*member of the investigative team cited in the appendix of the manuscript) PMID:20233982.
29. Linder JA, **Reyes Nieva H**, Blumentals WA. Antiviral and antibiotic prescribing for influenza in primary care. *J Gen Intern Med*. 2009 Apr; 24(4):504-10. PMID:19225847.

#### Proceedings of meetings and other non-peer reviewed research publications

1. **Reyes Nieva H**, Kaplan RL, Madani N. Women and HIV: Update from the Middle East and North Africa. Global Network of Researchers on HIV/AIDS in the Middle East and North Africa (GNR-MENA). 2010 International AIDS Conference, Vienna, Austria.
2. **Reyes Nieva H**, Doctor JN, Friedberg MW, Birks C, Fiskio JM, Volk LA, Linder JA. "Comparing Clinicians' Perception of Their Own and Their Peers' Antibiotic Prescribing to Actual Antibiotic Prescribing for Acute Respiratory Infections in Primary Care" in Abstracts from the 37th Annual Meeting of the Society of General Internal Medicine. *J Gen Intern Med*. 2014 Apr;29 Suppl 1(Suppl 1): 55. PMID: 24737224.

#### Professional educational materials or reports, in print or other media

1. When Things Go Wrong in the Ambulatory Setting. 2013. The PROMISES Study.\*  
\*member of the writing committee
2. Using the Monthly Report Form Tool. 2011. Harvard PEPFAR Nigeria. Training Manual.
3. Using the Adult Quality Improvement Tool. 2011. Harvard PEPFAR Nigeria. Training Manual.
4. Using the Pediatric Quality Improvement Tool. 2011. Harvard PEPFAR Nigeria. Training Manual.
5. Using the Data Quality Assessment Tool. 2011. Harvard PEPFAR Nigeria. Training Manual.
6. Data Quality Control and Assurance (Intermediate Data Manual). 2010. Harvard PEPFAR Nigeria. Training Manual.
7. Guidelines for Reporting Clinical Data Quality Assessments. 2010. Harvard PEPFAR Nigeria. Technical Guideline.

8. Generating Adult Quality of Clinical Care Indicators in an HIV Program. 2010. Harvard PEPFAR Nigeria. Technical Guideline.
9. Generating Pediatric Quality of Clinical Care Indicators in an HIV Program. 2010. Harvard PEPFAR Nigeria. Technical Guideline.
10. Introduction to Data Management (Beginner Data Manual). 2009. Harvard PEPFAR Nigeria. Training Manual.

### *Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings*

Works resulting in publication are not included below unless awarded special recognition.

#### **Regional**

1. **Reyes Nieva H**, Blackley S, Streed C, Fiskio J, Zhou L. High physician and clinic-level variation in documentation of sexual orientation and gender identity in the electronic health record. Plenary presentation. New England Science Symposium, Boston, MA; 4/2018.  
**Received the Ruth and William Silen Award, Third Prize**

#### **National**

1. **Reyes Nieva H**, Zucker J, Tucker EG, Castor D, Yin MT, Gordon P, Elhadad N. Enabling a Learning Public Health System: Enhanced Surveillance of Sexually Transmitted Infections. Oral Presentation. American Medical Informatics Association 2023 Annual Symposium. New Orleans, LA; 11/2023.
2. **Reyes Nieva H**, Tucker EG, McLean J, DeLaurentis C, Gunaratne S, Elhadad N, Zucker J. Development and Validation of Machine Learning and Deep Learning Models for Mpox in a Learning Health System. Poster Presentation. American Medical Informatics Association 2023 Annual Symposium. New Orleans, LA; 11/2023.
3. **Reyes Nieva H** and Elhadad N. Mining the Health Disparities and Minority Health Bibliome: A Computational Scoping Review. Oral Presentation. American Medical Informatics Association Annual Symposium. Washington, DC; 11/2022.
4. Acharya N, **Reyes Nieva H**, Natarajan K. Analyzing shifts in healthcare-seeking behavior among All of Us enrollees in the era of COVID-19. Poster Presentation. American Medical Informatics Association Annual Symposium. Washington, DC; 11/2022.
5. Sun T, Hardin J, **Reyes Nieva H**, Natarajan K, Cheng RF, Ryan P, Elhadad N. Large-scale Characterization of Gender Differences in Age at Diagnosis and Time to Diagnosis in Longitudinal Observational Health Data. National Institutes of Health (NIH) Office of Research on Women's Health (ORWH) Workshop on Gender and Health: Impacts of Structural Sexism, Gender Norms, Relational Power Dynamics, and Gender Inequities. Poster Presentation. Virtual Event; 10/2022.
6. **Reyes Nieva H**, Sun TY, Gorman SR, Mao G, Elhadad N. Differential Presentation and Delays in Treatment for Acute Myocardial Infarction Associated with Sex and Race/Ethnicity. Oral Presentation. American Medical Informatics Association Annual Symposium. San Diego, CA; 11/2021.
7. Sun TY, Chen J, **Reyes Nieva H**, Bear Don't Walk OJ IV, Altosaar J, Elhadad N. Gender Differences in Time to Diagnosis through Fairness and Time Variant Evaluation of EHR Data. American Medical Informatics Association Annual Symposium. San Diego, CA; 11/2021.
8. **Reyes Nieva H** and Elhadad N. Latent Topics and Trends in Health Disparities Literature. Poster presentation. National Library of Medicine Informatics Training Conference. 06/2021.

9. Pang C, Chen R, **Reyes Nieva H**, Kalluri KS, Sun TY, Jiang X, Rodriguez VA, Ryan PB, Natarajan K. Characterization and Comparison of Embedding Algorithms for Phenotyping across a Network of Observational Databases. Oral Presentation. American Medical Informatics Association Annual Symposium. 11/2020.
10. Boskey E, Tabaac A, Wigell R, Wolf K, Lage I, Landrum S, **Reyes Nieva H**, Bearnot B, Streed C. Using patterns of missing EHR data to identify care disparities in gender diverse patients. Oral Presentation. APHA Annual Meeting and Expo. 10/2020.
11. Mlaver E, Dalal AK, **Reyes Nieva H**, Chang F, Hanna J, Ravindran S, McNally K, Stade D, Morrison C, Bates D, Dykes P. An Analysis of Patient Portal Use in the Acute Care Setting. Oral Presentation. American Medical Informatics Association Annual Meeting. San Francisco, CA; 11/2015.
12. **Reyes Nieva H**, Palm K, Zucconi T. Advocacy and Implementation: Gathering SOGI Demographics in the Clinical Setting. Oral presentation. GLMA 33rd Annual Conference. Portland, OR; 9/2015.
13. Dempsey P, **Reyes Nieva H**, Businger A, Linder JA. Accuracy and Gaming of the Acute Bronchitis Antibiotic Prescribing Performance Measure. Poster presentation. Society of General Internal Medicine Annual Meeting. San Diego, CA; 04/2014.
14. **Reyes Nieva H**, Doctor JN, Friedberg MW, Birks C, Fiskio JM, Volk LA, Linder JA. Comparing Clinicians' Perception of Their Own and Their Peers' Antibiotic Prescribing to Actual Antibiotic Prescribing for Acute Respiratory Infections in Primary Care. Oral presentation. Society of General Internal Medicine Annual Meeting, San Diego, CA; 4/2014.  
**Received the Outstanding Quality and Patient Safety Oral Presentation Award**

## International

1. **Reyes Nieva H**, Tucker EG, Castor D, Yin M, Gordon P, Elhadad N, Zucker J. Health Information Exchange Enables Enhanced STI Surveillance Using Electronic Health Record Data. Oral Presentation. STI & HIV 2023 World Congress, Chicago, IL; 07/2023.
2. **Reyes Nieva H**, Zucker J, Tucker EG, McLean J, DeLaurentis C, Gunaratne S, Elhadad N. Development and Validation of Machine Learning and Deep Learning Models to Identify Human Monkeypox. Poster Presentation. STI & HIV 2023 World Congress, Chicago, IL; 07/2023.
3. **Reyes Nieva H**, Zucker J, Tucker EG, McLean J, DeLaurentis C, Gunaratne S, Elhadad N. Development and Validation of Machine and Deep Learning Classifiers for Monkeypox. Poster Presentation. Symposium on Artificial Intelligence for Learning Health Systems (SAIL), Río Grande, Puerto Rico; 05/2023.
4. Tucker EG, **Reyes Nieva H**, Schiffer K, Grant L, Yin MT, Castor D, Gordon P, Elhadad N, Zucker J. HIV Viral Load Suppression and Racial Disparities During the COVID-19 Pandemic in NYC. Poster Presentation. Conference on Retroviruses and Opportunistic Infections (CROI 2023). Seattle, WA; 02/2023.
5. Desai PM, Ostroplets A, Richter LR, **Reyes Nieva H**, Spotnitz M, Rodriguez VA, Sun TY, Natarajan K. Phenotype Development and Evaluation of Heart Failure: A Case Study in using Patient-Level Prediction to Improve Phenotype Validity. Poster presentation. OHDSI Global Symposium. 09/2021.
6. **Reyes Nieva H**, Linder JA. Gathering Sexual Orientation and Gender Identity Demographics in the Clinical Setting. Oral Presentation. North American Primary Care Research Group Practice-Based Research Network Conference, Bethesda, MD; 7/2015.
7. **Reyes Nieva H**, Linder JA. PBRN Organization and Governance to Promote Practice, Clinician, Researcher, and Patient Engagement. Workshop. North American Primary Care Research Group Practice-Based Research Network Conference, Bethesda, MD; 07/2014.

*Educational Material for Patients and the Lay Community***Books, monographs, articles and presentations in other media**

- 2012 Harvard School of Public Health/AIDS Prevention Initiative in Nigeria: Reducing the Burden of AIDS U.S. President's Emergency Plan for AIDS Relief  
Contributor, Harvard PEPFAR Nigeria Program Report
- 2012 Harvard School of Public Health/Management and Development for Health: Reducing the Burden of AIDS in Tanzania U.S. President's Emergency Plan for AIDS Relief  
Contributor, Harvard PEPFAR Tanzania Program Report
- 2012 Botswana-Harvard AIDS Institute Partnership: Reducing the Burden of AIDS U.S. President's Emergency Plan for AIDS Relief  
Contributor, Harvard PEPFAR Botswana Program Report

**Other Professional Positions**

- 2010-2012 *Data Quality Assurance Manager*, Harvard University/U.S. President's Emergency Plan for AIDS Relief (PEPFAR), Boston, MA
- 2008-2010 *Data, Training, and Education Coordinator*, Harvard University/U.S. President's Emergency Plan for AIDS Relief (PEPFAR), Boston, MA
- 2006-2007 *Emergency Medical Technician*, Tufts Emergency Medical Services, Medford, MA
- 2004-2005 *Client Outreach Officer*, Advanced Strategies for Healthcare Access, New Haven, CT
- 2003-2004 *Editorial Assistant/Contributor (work study)*, Yale Medicine Magazine, New Haven, CT
- 2003 *Paralegal*, Raymond B. Schwartzberg & Associates, New York, NY
- 2001-2002 *Client Advocate (work study)*, Student Health Outreach (SHOut), New Haven, CT
- 2000-2001 *Library Clerk (work study)*, Yale University, Sterling Memorial Library, New Haven, CT
- 2000-2001 *Program Assistant (work study)*, Yale International Affairs Council, New Haven, CT
- 2000-2001 *Reading Tutor (work study)*, America Reads, New Haven, CT

**Computer and Language Skills**

**Computing** Python, R, SAS, SQL, Unix, bash, git, L<sup>A</sup>T<sub>E</sub>X, HTML, ArcGIS, QGIS, SaTScan

**Languages** English, Spanish, Mandarin (beginner)