Doris Duke Charitable Foundation International Clinical Research Fellowship
List of Yale and International Mentors and Sites

Dr. Anthony Moll, Tugela Ferry, South Africa (Drs. Friedland and Shenoi, Yale Mentors)
Contact Dr. Sheela Shenoi, sheela.shenoi@yale.edu
Sub-Saharan Africa carries the highest global burden of HIV/AIDS and TB. Tugela Ferry, an impoverished area in rural KwaZulu-Natal Province, the site of our research programs, is the global epicenter of the convergence of the epidemics of HIV/AIDS and TB and the newly described epidemic of multiple and extensively drug resistant (MDR and XDR) TB. To combat these triple epidemics, our research projects involve testing innovative health facility and community-based strategies to improve case detection, linkage to care, and health system strengthening to improve clinical outcomes and reduce community wide morbidity and mortality. These studies are carried out in collaboration with Yale and other US investigators and colleagues from the South African Department of Health, Philanjalo (a South African NGO) and the University of KwaZulu Natal School of Medicine. NIH, CDC, PEPFAR, USAID and US research and charitable foundations provide support for these projects. Our work has increased identification and enrollment of individuals into HIV and TB care, has been associated with reduced incidence of both MDR and XDR TB, and has resulted in change in South African health policy. Since 2007, Doris Duke International Clinical Research Fellows have played important roles in the development of the research studies, their implementation and analysis, and presentation and publication. The success of the fellows is documented by their active participation in more than 30 presentations/abstracts at local, national and international meetings and authorship on 16 publications in peer reviewed journals. Students have subsequently continued their clinical training at US institutions with recognized global health programs directed towards academic careers in global health. In the coming years, Doris Duke student fellows will work on projects expanding an innovative integrated TB/HIV community-based intensive case finding strategy in congregate settings, training community health workers to provide home based screening for TB, HIV, diabetes and hypertension, determining eligibility and referring for isoniazid preventive therapy, developing TB clinical disease severity models, and evaluating TB host immunity in this rural, resource limited setting.

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Mitermayer Reis, MD, MSc, PhD, Salvador, Brazil (Dr. Ko, Yale Mentor)
Contact: Dr. Albert Ko, albert.ko@yale.edu
Projects: Fiocruz, the research branch of the Brazilian Ministry of Health, and Yale University have a long-standing research and training program in the city of Salvador which focuses on health problems that have emerged due rapid urbanization and the growth of urban slum settlements. The program focuses on infectious diseases such as leptospirosis, a rat-borne disease which is the cause of epidemics of pulmonary hemorrhage syndrome, bacterial meningitis and acute respiratory infections, vaccine preventable diseases and dengue. The site also provides research training opportunities in non-communicable diseases which affect slum populations such as hypertension, food insecurity and violence. Furthermore, Fiocruz and Yale coordinate a NIH-sponsored Global Infectious Disease Training Program (D43 TW00919) and sponsored ten Fulbright fellows and ten Global Health Equity Scholars and Fogarty International Clinical Research Scholars fellows in the past 10 years. Please contact the site PIs for more specific details. On-going projects include:

1) NIAID-supported project, Natural History of Urban Leptospirosis (R01 AI052473), is a cohort study of 14,000 urban slum residents, initiated in 2003, which is characterizing the natural
history of leptospirosis and determining the effectiveness of improved sanitation and other community-based interventions in preventing this zoonotic disease.

2) NIAID-supported International Collaboration in Infectious Disease Research program, Disease Determinants of Urban Leptospirosis (U01 AI088752) is applying combined field and translational research approaches to identify the pathogen, environment and host-related factors for leptospirosis and its transmission. Projects in this program include active surveillance for leptospirosis and its severe disease forms, identification of virulence factors in the spirochete pathogen, development of environmental detection assays for the agent, and the use of proteome microarray to identify candidate antigens for diagnosis, prognosis and vaccine development. The long-term goal is to identify new intervention strategies for this neglected tropical disease.

3) NIAID-supported project, Rapid Serodiagnostic Test for Leptospirosis (R44 AI072856), has developed a point-of-care test for leptospirosis and is evaluating the effectiveness of this rapid test for diagnosis and in combination with treatment, preventing life-threatening complications.

4) Fogarty-supported project, Ecoepidemiology of Leptospirosis in the Urban Slums of Brazil (R01 TW009504), was initiated this year as part of the NSF-NIH Ecology and Evolution of Infectious Disease Program. The project performs a systematic interdisciplinary evaluation of the reservoir host, pathogen, environment and social determinants of urban poverty which is needed to understand the timing, location and intensity of leptospirosis epidemics. We incorporate eco-epidemiological studies of rat and environmental reservoirs with long-term prospective studies of slum (favela) residents to build an understanding of the links from leptospirosis in its reservoirs to infection in humans.

5) Fogarty-supported project (Transmission of Drug-Resistant Streptococcus pneumoniae in Brazil, R01 TW007303), is tracking the incidence and risk factors for bacterial meningitis and the transmission of its causative agents, including S. pneumoniae, in Brazil. Furthermore current studies are determining the effectiveness of vaccine interventions against bacterial meningitis in urban slum populations.

6) Brazilian Ministry of Health and Fogarty-supported project (Disease Burden of Dengue in Brazil) is characterizing the transmission of urban dengue using on-going active surveillance systems and cohort studies in the city of Salvador. The overall aim is to obtain baseline epidemiological information on dengue and prepare a field site for future clinical trials which will evaluate an inactivated dengue vaccine that is being developed as a joint venture between Fiocruz and private pharmaceutical industry partners.

Webpages for sites and research programs:
Fiocruz: [http://www.bahia.fiocruz.br/](http://www.bahia.fiocruz.br/)
Yale: [http://publichealth.yale.edu/emd/research/urban/index.aspx](http://publichealth.yale.edu/emd/research/urban/index.aspx)
[http://publichealth.yale.edu/research/ghes/brazil.aspx](http://publichealth.yale.edu/research/ghes/brazil.aspx)

Julio Croda, MD, PhD, Dourados, Brazil (Dr. Albert Ko, US Mentor)
Contacts: Dr Julio Croda, MD, PhD, juliocroda@ufgd.edu.br (Site Mentor); Dr. Albert Icksang Ko, MD, albert.ko@yale.edu (US Mentor)
Affiliation: Faculty of Health Sciences, Federal University of Grande Dourados (UFGD), Yale Schools of Public Health and Medicine
Focus: Tuberculosis in Neglected Populations
Projects: Federal University of Grande Dourados and Yale University have a long-standing research and training program in the city of Dourados which focuses on tuberculosis in neglected populations such as indigenous, drug users and prisoners. The program focuses on epidemiology and social
determinants of tuberculosis. The site also provides research-training opportunities in non-communicable diseases, which affect neglected populations such as sexually transmitted diseases, HIV/AIDS, suicide and violence. Furthermore, UFGD has participated with Yale in a NIH-sponsored Global Infectious Disease Training Program (D43 TW00919) since 2008. Please contact the site PIs for more specific details. On-going projects include:

1) **Risk factors associated with latent tuberculosis, HIV, hepatitis B, C and syphilis in the prison population in the state of Mato Grosso do Sul** (Mato Grosso do Sul State Research Foundation, FUNDECT 23/200.547/2013): The Project is a prospective cohort study that began in 2013 and involves 3,500 inmates of 12 prisons in the state of Mato Grosso do Sul.

2) **Magnitude and severity of sequelae in tuberculosis (TB) residual** (Brazilian National Research Council, CNPq 40/2012): is a longitudinal study of indigenous and non-indigenous populations aimed at assessing the disease burden, risk factors and long-term impacts related to tuberculosis.

3) **Transmission dynamics and determinants associated with the acquisition and development of tuberculosis in ethnically distinct populations** (Brazilian National Research Council, CNPq 471429/2011): The study aims: a) to identify the risk factors associated with recent transmission, determined by standard genotyping by IS6110 RFLP and MIRU – VNTR, b) Identify outbreaks or clusters of spatiotemporal isolated cases with the same genotypic pattern, c) Compare the traditional identification of contacts and social network analysis to identify genetically related outbreaks, d) Identify socioeconomic factors and immunological associated with the acquisition and development of tuberculosis in ethnically distinct populations residing in the city of Dourados, Brazil.

4) **Dynamics of recent transmission of tuberculosis and multidrug resistance on the borders of Brazil** (Brazilian National Research Council, CNPq 404237/2012-6). We will perform a multicenter study in four border regions of Brazil to establish an active surveillance of the disease with the implementation of universal culture in these locations and through a cross-sectional study to determine the variables associated with recent transmission in context of borders. We will also determine the prevalence of MDR and XDR strains in these regions as well as comparing the traditional identification of contacts and social network analysis to identify genetically related outbreaks.

5) **HIV / AIDS Depression and Cognitive Decline : Behavioral Model , Pilot Drug Discovery and Clinical Analysis** (Brazilian National Research Council, CNPq 472044/2012-5): We will implement coordinated basic and clinical studies of depression and cognitive decline that arise in patients with HIV/AIDS. These pathologies seriously affect patient quality of life and result from the many effects of the virus on the central nervous system (CNS), including the pronounced CNS inflammatory response induced by HIV and the resulting elevation of inflammatory cytokines. The pathologies also arise from the neurotoxic effects of HIV proteins, including the ENV protein, which is expressed at high levels in the HIV/AIDS patient CNS.

6) **Social Inequality and Tuberculosis : Spatial distribution , risk factors and pharmacogenetics in the perspective of ethnicity** (National School of Public Health, INOVA - ENSP). The study aims...
a) To characterize the genetic risk factors related to greater adverse effects to drugs, b) determine the frequencies of variants of genes involved in metabolism of anti-tuberculosis drugs (NAT2, CYP2E1 and GSTs) in patients diagnosed during the study period; c) Compare gene frequencies and genotype among individuals who developed adverse effects and those who did not develop.

Webpages for sites and research programs:
Fiocruz: http://www.ufgd.edu.br/fcs; Yale: http://publichealth.yale.edu/research/ghes/brazil.aspx

Sergii Dvoriak, MD, PhD, Ukraine (Dr. Altice, Yale Mentor)
Site: Kiev, Ukraine; Focus: HIV, HCV & TB Prevention and Treatment, Substance Abuse, and Prisoners
Affiliation: The Ukrainian Institute on Public Health Policy (UIPHP); Yale Schools of Public Health and Medicine
Contacts: Dr. Frederick Altice, MD, MA frederick.altice@yale.edu; Sergii Dvoriak, M.D., Ph.D. dvoryak@uiphp.org.ua
Projects: The training site will include the Ukrainian Institute on Public Health Policy (UIPHP), which has ongoing relationships with the country’s two largest NGOs that provide HIV prevention and treatment in Ukraine - Alliance Ukraine and the All Ukrainian Network of People Living with HIV - the Ministry of Health, Ministry of Prisons, WHO, USAID and CDC. Drs. Altice and Dvoryak have collaborated together since 2005 in these sites, which have served as training sites for numerous pre- and post-doctoral fellows. In 2005 alone, Drs. Altice and Dvoryak were among the first to train 32 Ukrainian physicians and administrators on the treatment of HIV and opioid dependence when they first introduced buprenorphine into the country as primary and secondary HIV prevention. Many of these trainees have moved to important positions in the Ministry of Health, Clinton Foundation and professional societies within Ukraine. Since then, the team has continued to train individuals both from Ukraine and the United States on issues related to urban health, HIV, tuberculosis, health services research and addiction medicine. Drs. Altice and Dvoryak collaborate on two active R01 grants from the National Institutes on Drug Abuse. The first is to conduct research in collaboration with the criminal justice system. This grant collaborates with the United Nations Office of Drug Coordination for Central Asia and with collaborators in Georgia. This grant is to conduct intervention research with prisons primarily in Ukraine, but also has been extended through funding from UNODC to include prison-related research in the five countries of Central Asia (Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan) and Azerbaijan. The second NIH grant is to conduct implementation research to expand methadone and buprenorphine treatment for HIV prevention and treatment in Ukraine and to use health services research methods to introduce the integration of extended-release naltrexone into HIV clinical care settings. All of this work has mathematical modeling approaches to support the findings. In addition, Drs. Altice and Dvoryak have been funded by numerous other international agencies, including USAID, CDC, UNAIDS, Open Society Institute and the Global Fund to conduct research on healthcare delivery systems for people who use drugs, including the development of the first integrated healthcare systems. On-going projects for fellows include:
1) A NIDA-funded (R01-DA-029910) research program designed to address the linked epidemics of HIV, injection drug use, and the criminal justice system among states of the former Soviet Union. This multi-phase investigation is focused on: (a) evaluating the prevalence of chronic infectious diseases, mental illness, and substance use disorders among soon-to-be-released prisoners with HIV or at risk for HIV; (b) disseminating research findings with criminal justice officials and stakeholders to establish research priorities and plan interventions; and (c) conduct pilot studies to develop and evaluate effective strategies for reducing HIV transmission among IDUs.
2) A NIDA-funded (R01-DA-033679) project aimed at expanding access to and retention on medication-assisted therapies (opioid substitution therapy including methadone, buprenorphine and extended-release naltrexone) for the treatment of opioid dependence through the use of an evidence-based intervention program, NIATx (Network for the Improvement of Addiction Treatment).

Specifically, this research will: (a) evaluate the individual- and organization-level facilitators and barriers to entry into and retention in MAT in Ukraine; (b) train experts in the use of the NIATx model; and c) To develop a new healthcare delivery model, using XR-NTX, to increase access to MAT by integrating XR-NTX directly into HIV clinical care settings, including health services research and implementation science methods.

**Webpages for sites and research programs:**
Yale:  [http://medicine.yale.edu/intmed/people/frederick_altice-3.profile](http://medicine.yale.edu/intmed/people/frederick_altice-3.profile)
[http://cira.yale.edu/people/frederick-l-altice-md](http://cira.yale.edu/people/frederick-l-altice-md)

**Qualifications of potential trainees:**
Post-third year medical school students; Post graduation from medical school; Ph.D. candidates who completed the first one to two years of their pre-doctoral program; post-PhD and Master’s of Science/MPH level fellows in the disciplines of public health, sociology, anthropology, economics, mathematical modeling, health services research and international health and business.

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**Celia Cristie – Samuels, MD, MPH, Jamaica (Dr. Paintsil, Yale Mentor)**
**Contact:** Dr. Elijah Paintsil, elijah.paintsil@yale.edu

Doris Duke Medical Student Fellows will participate in clinical research with our collaborator, Dr. Christie-Samuels, at University of West Indies, Jamaica. Dr. Christie-Samuels is the PI of several projects with support from Jamaican Ministry of Health, the Global Fund to fight AIDS, TB, and Malaria, and other international funding agencies. These include:

- Jamaica’s Pediatric, Perinatal and Adolescent HIV/AIDS Programme - University of the West Indies (JaPPAAIDS). This project aims to consolidate existing gains while scaling up to provide universal access to treatment, care and prevention services with special emphasis on vulnerable populations in Jamaica. Doris Duke research fellow will conduct research projects to assess the impact of this program.
- A prospective observational study of HIV-infected pregnant women and their infants at Clinical sites in the Caribbean. This project accesses (1) the determinants and the rate of mother-to-child transmission and (2) the effect of treatment of HIV disease progression in this cohort.

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**Lorna Renner, MBChB, Ghana (Dr. Paintsil, Yale Mentor)**
**Contact:** Dr. Elijah Paintsil, elijah.paintsil@yale.edu

The Yale-University of Ghana Partnership in Global Infectious Diseases Research was established in 2006 with the mission of accelerating progress in Infectious Diseases and Public Health research in Africa through collaborative partnerships that build intrinsic research capacity, reverse “brain-drain” by strengthening academic infrastructures, and create viable career opportunities for African and American scientists. Research activities occur at the Medical School campus, Korle-Bu Teaching Hospital, and the Noguchi Memorial Institute for Medical Research (NMIMR) at the main campus of University of Ghana. On-going projects for medical student research fellows include:

**Medical School site:**
- Natural history study of a cohort of HIV-infected children in Ghana. The study is supported by the Ministry of Health of Ghana and the Global Fund. The objectives of the study are to: (1) determine the effectiveness of antiretroviral therapy on HIV disease progression; (2) characterize the evolution and kinetics of HIV drug resistance mutations leading to treatment failure; (3) assess the effect of other
tropical infections such as malaria, helminthiasis, schistosomiasis, viral hepatitis, and tuberculosis on HIV disease progression in children; and (3) assess whether targeted laboratory monitoring of antiretroviral therapy is clinically beneficial and cost effective in a resource-limited setting.

- A bioecological pediatric HIV disclosure intervention in Ghana. This project is pending NICHD funding. The objectives are: (1) to evaluate through a randomized trial the effect of a structured and culturally-relevant disclosure intervention that is delivered by a specialist as an integral component of routine HIV healthcare on the rate of caregiver disclosure of pediatric HIV; and (2) to assess the effect of HIV pediatric disclosure on medication adherence and health outcomes of children (virologic, immunologic, psychosocial, and behavioral) and the caregiver (psychosocial).

Noguchi Memorial Institute for Medical Research (NMIMR) site:
The Noguchi Memorial Institute for Medical Research (NMIMR) spearheads biomedical research in Ghana, conducting research on diseases of public health importance in the country. The Institute obtains funding for its activities from both the Government of Ghana and international funding agencies. Medical student fellows will participate in the institute’s several projects such as:

- Influenza disease surveillance supported and funded by the Global Influenza Surveillance Network (GISN) of the World Health Organization’s (WHO) Global Influenza Program.
- Surveillance of the epidemiology and molecular mechanisms of antihelminthic treatment failure in Ghana.

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Harriet Mayanja-Kizza, MBChB, MMed, MSc, Uganda (Drs. Rastegar and Rabin, Yale Mentors)

Contacts: Dr. Asghar Rastegar, asghar.rastegar@yale.edu; Dr. Tracy Rabin, tracy.rabin@yale.edu

Makerere University is a public university based in Kampala, Uganda with 8 Colleges, one of which is the Makerere University College of Health Sciences (MakCHS). MakCHS has 4 schools including the School of Medicine, School of Public Health, School of Biomedical sciences and School of Health Sciences. The College is based at the Mulago referral and training hospital, the largest in the country. Priority areas of research are communicable diseases – HIV, tuberculosis, malaria, and non-communicable diseases, specifically diabetes and anemia, both common in Uganda. Research has been at the forefront of the MakCHS, with the University ranked 10th in Africa. The MakCHS has contributed significantly, with a wide repertoire of publications in national and international peer reviewed journals. The Makerere University-Yale University (MUYU) Collaboration was created in 2007. It has a coordinator and a secretariat which coordinates activities in the MakCHS international office. This collaboration has an exchange of students, residents and faculty members mainly for research and clinical training purposes. To date, over 40 staff and students from Makerere have visited Yale University and over 100 from Yale to Makerere. Makerere has student based research collaborations with various universities in the USA, including the Fogarty research training program.

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Mike Wilson, PhD (Dr. Cappello, Yale mentor)

Contact: Michael Cappello MD, michael.cappello@yale.edu.

The Ghana-Yale Partnership for Global Health was launched in 2006 in order to build sustainable biomedical research capacity through an ongoing collaboration between Yale University, the Noguchi Memorial Institute for Medical Research (NMIMR) at the University of Ghana, and the University of Ghana Medical School (UGMS). The Ghana-Yale Partnership has established a unique model for improving health in sub-Saharan Africa by fostering collaborative research, sponsoring bi-directional faculty and student exchanges, and training young scientists for productive careers focused on infectious diseases of great public health importance. This innovative program effectively leverages the expertise of faculty at the University of Ghana and Yale, creating a partnership that catalyzes discovery while building research capacity. Collaborative research projects focus on the epidemiology and pathogenesis of
infectious diseases, including malaria, helminth infections, and HIV. Current studies to map response to
deworming medicines have identified the presence of benzimidazole resistance markers in central
Ghana, work that will inform future public health strategies and policies. Student projects typically include
both laboratory and field based training opportunities that provide exposure to state of the art methods in
global infectious diseases research. The Partnership also provides trainees with thoughtful mentoring
from collaborating faculty researchers, who carefully develop projects that are suited to the interests and
long term goals of the student.

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NicoletteduPlessis, MBBcH, Pretoria, South Africa  (Dr. Forsyth, Yale Mentor)
**Contact:** Dr. Brian Forsyth, brian.forsyth@yale.edu.

The collaboration with researchers at the University of Pretoria has been long standing and is
primarily focused on HIV disease and its effects on women and children. Dr. Nicolette du Plessis, a
pediatric infectious disease specialist will be the primary person providing onsite mentorship. Examples
of studies in which a student could choose to participate include investigations relating to management of
HIV-infected infants and medication adherence among HIV-infected adolescents.

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Hao Wei, MD, PhD, China (Drs. Schottenfeld and Chawarski, Yale Mentors)
**Contacts:** Dr. Richard Schottenfeld, richard.schottenfeld@yale.edu; Dr. Marek Chawarski,
marek.chawarski@yale.edu

The collaboration with researchers at the University of Pretoria has been long standing and is
primarily focused on HIV disease and its effects on women and children. Dr. Nicolette du Plessis, a
pediatric infectious disease specialist will be the primary person providing onsite mentorship. Examples
of studies in which a student could choose to participate include investigations relating to management of
HIV-infected infants and medication adherence among HIV-infected adolescents.

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Adeeba Kamarulzaman, MD, Malaysia  (Dr. Altice, Yale Mentor)
**Site:** Kuala Lumpur, Malaysia; **Focus:** HIV, Tuberculosis and Viral Hepatitis Prevention and
Treatment in Criminal Justice and Community Health Settings

**Affiliation:** University of Malaya; Yale Schools of Public Health and Medicine

**Contacts:** Dr. Frederick Altice, MD, MA frederick.altice@yale.edu; Adeeba Kamarulzaman, M.D.
adeeba@um.edu.my

**Projects:** The training site will be the University of Malaya and the Centre of Excellence on Research
in AIDS (CERiA), which has ongoing relationships with a number of different departments and schools
within the university, relationships with Malaysian government, including the Prisons Department,
Ministry of Health and the Anti-Drug Agency. The site also has an ongoing relationship with the
Malaysian AIDS Council, the country’s largest AIDS Service NGO that oversee the provision of HIV
prevention and treatment for the country. Drs. Altice and Kamarulzaman, now the University of
Malaysia’s Dean of the Medical School, have collaborated together continuously since 2005 and these
have served as training sites for numerous pre- and post-doctoral fellows. Drs. Altice and
Kamarulzaman have trained a number of pre- and post-doctoral fellows in both medicine and public health and collectively they have been involved in rolling out the first methadone maintenance treatment in the country as HIV prevention. They were also the first to become involved in criminal justice research and have been involved in both prison research, but also in examining alternatives to health and rehabilitation by comparing community models of care to compulsory drug detention centers. There are opportunities to work with drug use, HIV risk, tuberculosis, primary and secondary HIV prevention and intervention research within the “fisherman” industry through multiple existing collaborations. The team has continued to train individuals from Malaysia, the United States and elsewhere on issues related to urban health, HIV, tuberculosis, health services research and addiction medicine. Drs. Altice and Kamarulzaman collaborate on one large R01 grant from the National Institutes on Drug Abuse and several others from the United Nations and World Bank. We are currently conducting trials of both behavioral interventions and medication-assisted therapies for criminal justice populations transitioning from prison to the community as well as studies of TB in community and criminal justice settings. New studies underway are examining risk among female sex workers. Additional studies include mathematical modeling and cost-effectiveness analysis. On-going projects for fellows include:

1) A NIDA-funded research program designed adapt an evidence-based intervention, the Holistic Health Recovery Program (HHRP) – in collaboration with Michael Copenhaver from the University of Connecticut – and to compare it to methadone maintenance treatment among soon to be released prisoners in Malaysia who are transitioning to the community. Additional findings include our identification of increased prevalence of tuberculosis and potential health outcomes.

2) A World Bank-funded project that compares compulsory drug detention programs with community based methadone maintenance as an alternative to forced detention. Cost-effectiveness, mathematical modeling and health services outcomes are being examined.

3) Studies of active and latent tuberculosis among prisoners, community members and individuals entering substance abuse treatment programs.

Webpages for sites and research programs:
Yale:  http://medicine.yale.edu/intmed/people/frederick_altice-3.profile
http://cira.yale.edu/people/frederick-l-altice-md

Qualifications of potential trainees: Post-third year medical school students; Post graduation from medical school; Ph.D. candidates who completed the first one to two years of their pre-doctoral program; post-PhD and Master’s of Science/MPH level fellows in the disciplines of public health, sociology, anthropology, economics, mathematical modeling, health services research and international health and business.

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Jorge Sanchez, MD, Peru  (Dr. Altice, Yale Mentor)
Site: Lima, Peru; Focus: HIV prevention and treatment among men who have sex with men (MSM)
Affiliation: Asociación Civil Impacta Salud y Educación; Yale Schools of Public Health and Medicine
Contacts: Dr. Frederick Altice, MD, MA frederick.altice@yale.edu; Jorge Sanchez, M.D., M.P.H. jsanchez@impactaperu.org
Projects: The training site will include Impacta Peru, the country’s largest HIV/AIDS Service
Organization and research institute that is a member of the AIDS Clinical Trials Group (ACTG), HIV Prevention Trials Network (HPTN) and the HIV Vaccine Trials Network (HVTN). They have ongoing relationships with many of the country’s largest NGOs that provide HIV prevention and treatment in Peru, the Ministry of Health and Cayetano Herredia School of Medicine. Drs. Altice and Sanchez have collaborated together since 2010 in these sites, which have served as training sites for numerous pre- and post-doctoral fellows. The team has conducted bio-behavioral surveillance studies, health services research, interventions that promote HIV testing, linkage and retention in care and other health outcomes. Specifically, this team has been exploring the impact of alcohol use disorders and drug abuse among men who have sex with men (MSM) because Peru is experiencing a concentrated epidemic among this group. New studies are examining the risk of TB treatment adherence and completion among those with and without alcohol and drug use disorders. Primary and secondary prevention studies are underway, including treatment as prevention and adherence studies using medication-assisted therapy (e.g., naltrexone) and behavioral interventions. In addition, Impacta has relationships with many other universities including University of Washington and UCLA, where there are many active research projects. Drs. Altice and Sanchez collaborate on two active R01 grants from the NIDA and NIAAA and are writing new grants to expand some of this work to TB. The primary R01 is to expand HIV testing and to examine the impact of acute HIV infection (AHI) on ongoing HIV transmission among MSM. We will conduct network analyses and study linkage and retention in care after acute diagnosis as well as to examine the impact of “immediate” antiretroviral therapy on reducing onward HIV transmission. A second aim of this study is to conduct a RCT using extended-release naltrexone (XR-NTX) among MSM with alcohol use disorders who are newly diagnosed and to examine the impact of XR-NTX on retention in care, adherence, viral suppression and HIV transmission. We are also examining the impact of alcohol, drugs and neurocognitive impairment on HIV treatment outcomes as well as exploring mobile health technologies on improving HIV treatment outcomes. The second R01 is a comparative effectiveness trial comparing a pharmacotherapy versus a behavioral intervention for alcohol use disorders among HIV-infected MSM. The NIDA R01 has two aims:

**Aim 1:** We will investigate the impact of drug and alcohol use on HIV transmission by examining the role of MSM with substance abuse in transmission clusters identified through partner tracing and phylogenetic analysis. We will estimate the impact of timely ART on the decay dynamics of HIV VL in the genital tract of MSM with acute or recent infection (N≈200), allowing us to better estimate the potential impact of failure to treat and non-adherence during this period. To increase detection of acute and recent infections we will 1) expand community outreach to increase the frequency of HIV testing and to raise awareness of symptoms of AHI, 2) use assays which detect p24 or HIV RNA to rapidly detect AHI using real-time assays, and 3) use computerized real-time record linkage to prior HIV test results to detect recent infections. Data on drug and alcohol use, the frequency of detection of AHI and successful linkage to care and treatment, sexual network analysis including impact of substance use, effect of ART on genital tract viral load, the impact of drug and alcohol use on retention and medication adherence.

**Aim 2:** We will conduct a 12-month randomized, placebo-controlled trial of NTX-XR among HIV+ MSM in Lima Peru meeting DSM-IV criteria for AUDs to determine the impact of NTX-XR on a) proportion with VL<400 copies/mL; b) retention in HIV care; c) change in CD4 counts; and d) sexual risk behaviors overall and those associated with alcohol use. Alcohol treatment outcomes will include: a) time to alcohol relapse; b) % heavy drinking days; c) % days of abstinence; and d) lower addiction severity.

The comparative effectiveness trial is not yet underway and is expected to start with intervention
adaptation of the Holistic Health Recovery Program, a CDC evidence-based behavioral intervention and will do so to include alcohol use disorders and to be culturally competent in the South American context.

Webpages for sites and research programs:
Yale:  http://medicine.yale.edu/intmed/people/frederick_altice-3.profile
http://cira.yale.edu/people/frederick-l-altice-md

Qualifications of potential trainees: Post-third year medical school students; Post graduation from medical school; Ph.D. candidates who completed the first one to two years of their pre-doctoral program; post-PhD and Master’s of Science/MPH level fellows in the disciplines of public health, sociology, anthropology, economics, mathematical modeling, health services research and international health and business.

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Sunil Parikh, M.D., M.P.H., Yale Mentor

Site: Makerere University

Contacts: Sunil Parikh, MD, MPH: sunil.parikh@yale.edu

Projects: Makerere University in Kampala, Uganda has had long-standing research and clinical programs focusing on infectious diseases such as malaria, TB, and HIV. The Yale PI is a former recipient of a Doris Duke Clinical Scientist Development Award, and has been conducting studies in collaboration with Makerere University researchers since 2002. The research program is based currently both in Kampala and in the town of Tororo, in Eastern Uganda. Studies focus on aspects relating to the treatment of malaria in vulnerable populations, primarily young children and pregnant women. Yale Medical School also has extensive collaborations for the training of US physicians and students at the Makerere Hospital through an exchange program. Ugandan researchers also collaborate with Yale faculty through a NIH-sponsored Global Infectious Disease Training Program (Fogarty D43 TW007391) and sponsored 13 Fogarty International Research scholars and fellows in the past 4 years. The principal project in Eastern Uganda is an NICHD-supported project entitled Antimalarial pharmacology in HIV infected and uninfected children and pregnant women in Uganda, R01 HD068174 (Multiple PI, Parikh and Aweeka). A major goal of this project is to investigate the pharmacokinetics and pharmacodynamics of artemether-lumefantrine, the most widely adopted antimalarial therapy, in the context of age, pregnancy, and antiretroviral-related changes, with the goal of optimizing treatment for malaria and HIV. In addition, in Kampala, a newborn screening study is beginning to assess the prevalence of sickle cell disease, sickle variant syndromes, and linkage to care with the University Sickle Cell Clinic.

Webpages for sites and research programs:
Yale:  http://publichealth.yale.edu/people/sunil_parikh.profile

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Dr. Charles Mondo, Kampala, Uganda (Dr. Jeremy Schwartz, Yale Mentor)

Site: Uganda

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Non-communicable diseases (NCDs) account for a quarter of deaths in sub-Saharan Africa. In Uganda, a country of more than 30 million people with a rapidly growing population, the burden of NCDs is rising dramatically as it continues to face highly prevalent infectious diseases. This double burden, part of an
epidemiological shift catalyzed by major demographic and nutritional transitions, places major stresses on Uganda’s health system which is largely ill-prepared to address the complexities of chronic care delivery. The Uganda Initiative for Integrated Management of Non-Communicable Diseases (UINCD) is a research consortium that links researchers at Yale School of Medicine with Ugandan researchers and senior leaders in the Ministry of Health and Mulago National Referral Hospital. UINCD developed out of a long-standing collaboration between Yale School of Medicine and Makerere University College of Health Sciences that focuses on bidirectional capacity building and medical education. Under the co-Directorship of Dr. Charles Mondo (Mulago Hospital) and Dr. Jeremy Schwartz (Yale School of Medicine), UINCD is home to a growing portfolio of research projects that aim to understand the current epidemiological landscape and gaps in health professions training and health system delivery pertaining to NCDs in Uganda. UINCD has hosted and successfully mentored three Yale MPH students and two Global Health Corps fellows. We are actively pursuing NIH and other funding opportunities to support our work. Ongoing projects include:

- a nationwide needs assessment of healthcare worker education on NCDs
- impact of a MOH NCD training program on healthcare worker understanding and practice related to integrated NCD management
- development and implementation of integrated NCD training curricula for healthcare workers
- addressing the role of community health workers related to NCDs
- measuring provider performance and quality of chronic care delivery