

## **AIDS 2014 AWARDEES**

### **AIDS 2014 Abstract-related prizes**

The IAS and its partners sponsor every year a number of scientific prizes and awards to reward promising young and established researchers who are doing outstanding work in HIV research. Outstanding abstracts submitted to the 20th International AIDS Conference (AIDS 2014) have been selected by panels of senior scientists from around the world.

Prizes to Be Awarded at AIDS 2014:

### **IAS/ANRS YOUNG INVESTIGATOR AWARD**

The US\$2,000 IAS/ANRS Young Investigator Award is jointly funded by the IAS and the Agence Nationale de Recherche sur le sida et les hépatites virales (ANRS) to support young researchers who demonstrate innovation, originality, rationale and quality in the field of HIV/AIDS research. One prize is awarded to the top scoring abstracts in each of the conference tracks.

### **Award Ceremonies**

HIV Cure Symposium: Closing Session

Sunday 20 July: IAS/ANRS Young Investigator Awards – Special HIV Cure Prize

Time: 15:

Award presenters: Jean-François Delfraissy (ANRS) and Owen Ryan (IAS)

Plenary Session

Thursday 24 July: IAS/ANRS Young Investigator Awards

Time: 8:20

Two speakers: Jean-Michel Molina (ANRS) and Françoise Barré-Sinoussi (IAS)

### **2014 Awardees:**

#### **Matthew Woods, Canada**

Prize: IAS/ANRS Young Investigator Awards: A

Abstract: Interferon-induced HERC5 protein inhibits HIV-1 replication by two novel mechanisms and is evolving under positive selection

Contact: matthewwilliamwoods@gmail.com

Matthew Woods has always been interested in the battle between the human immune system and foreign microorganisms. His passion led him from my home in Niagara Falls, Canada to Western University in London Ontario where my interest for HIV and the immune system began. During his undergraduate degree, where he studied Microbiology and Immunology, he had the opportunity to complete a thesis project under the supervision of Dr Stephen Barr at Western University, Canada. During this thesis project he worked on an interferon-induced protein called TRIM22 and further characterized the anti-HIV-1 function of TRIM22. In 2009 he graduated with an Honours Specialization of Microbiology and Immunology with distinction and decided to continue his passion for research in Dr Barr's lab as a PhD candidate. During his PhD he has further characterized the anti-HIV effect of the interferon response and characterized the interferon-induced protein called HERC5. He has published two papers demonstrating

that HERC5 restricts HIV-1 replication by two novel mechanisms. He has found that HERC5 inhibits HIV-1 budding and release as well as viral mRNA nuclear export within the host cell. He is on track to graduate with his PhD by January, 2015.

Matthew Woods' dedication for combating HIV/AIDS drove me to become an ambassador for the Regional HIV/AIDS Connection (RHAC) in London, Ontario Canada. RHAC is a non-profit organization which is dedicated to spreading awareness to the community about HIV/AIDS as well as improving the lives of people who live with HIV. As an ambassador he talks to the community at various events, clubs, organizations and workplaces about HIV and discuss prevention strategies as well as current HIV research. He also is a member of Virtual Researchers On Call (VROC) where he teaches high school students in Canada and the US about viral infection as well as prevention strategies. In the future he hopes to continue his passion for HIV research.

**Sarah E. Rutstein, United States**

Prize: IAS/ANRS Young Investigator Awards: B

Abstract: Identifying persons with acute HIV infection in urban Malawi HIV testing and sexually transmitted infection clinics: an opportunity for HIV transmission prevention

Contact:

Sarah Rutstein is an MD/PhD candidate at the University of North Carolina at Chapel Hill. She has been working in the field of HIV research for over 10 years. In 2012, she received a National Research Service Award for her pre-doctoral training from the United States' National Institutes of Health (NIH). In addition to optimizing ART outcomes in resource-limited settings, her research interests include early identification and linkage to care for persons recently infected with HIV. Her research has been largely based in Malawi, where she has coordinated with providers and policy makers in designing studies and implementing research findings. Sarah Rutstein's currently works with a multidisciplinary research team evaluating biomedical and behavioural interventions for persons identified with acute HIV infection – the earliest stage of HIV infection.

**Jillian Pintye, United States**

Prize: IAS/ANRS Young Investigator Awards: C

Abstract: Male circumcision and the incidence of syphilis acquisition among male and female partners of HIV-1 serodiscordant heterosexual African couples: a prospective study

Contact: jillian.pintye@gmail.com

Jillian Pintye is currently a doctoral student in the Department of Nursing at the University of Washington in Seattle. She holds a Master of Public Health in Epidemiology from the same institution. She is Registered Nurse with a Bachelor of Science in Nursing from La Salle University in Philadelphia, Pennsylvania and a member of the Sigma Theta Tau International Honors Society of Nursing. Jillian is also a former Fulbright Scholar and United States Peace Corps Volunteer. Jillian Pintye credits her time as a United States Peace Corps Volunteer in Botswana as the inspiration for her career in HIV research. She has worked with the Centers for Disease Control and Prevention in Gaborone and has also held epidemiologist positions at the local and state level in Washington, where she currently resides.

Jillian Pintye currently works in the Department of Global Health at the University of Washington. She worked with the International Clinical Research Center of the University of Washington and the Partners PrEP Study Team under the direction of Dr Renee Heffron and Dr Jared Baeten on her abstract presented at AIDS 2014. Her analysis investigated the association of male circumcision and incidence of syphilis infection among men and women of HIV-1 serodiscordant couples. The results of her analysis

found that male circumcision was associated with decreased incidence of syphilis in women and HIV-1 infected men, supporting that male circumcision may have benefits in populations beyond HIV-1 uninfected men. She is honored to represent her research team and co-authors and is grateful for the opportunity to present their work to the distinguished delegates of AIDS 2014.

**Lucie Cluver, South Africa**

Prize: IAS/ANRS Young Investigator Awards: D

Abstract: Threefold increased suicide attempt incidence amongst AIDS-affected and abused adolescents in South Africa: a prospective national study

Contact: lucie.cluver@spi.ox.ac.uk

Dr Cluver is a South African social worker and an Associate Professor at Oxford University and the University of Cape Town. She works with the South African government, UNICEF, PEPFAR-USAID and the WHO to develop rigorous evidence for children affected by HIV.

The project presented in her winning abstract is a national longitudinal study of adolescents in South Africa. These large-scale research studies only happen because of an incredible team of postdoctoral researchers, PhD students and colleagues at Oxford, Wits and University of Cape Town. This paper was co-authored by Professor Mark Orkin at the University of Witwatersrand in Johannesburg, Professor Lorraine Sherr at University College London and Dr Mark Boyes at Curtin University, Perth. The study interviewed 6000 adolescents, with a one-year follow-up of 97%. We know that HIV+ adults have higher rates of suicidal behaviour, but we need to understand whether their children and those whose parents have died of AIDS are also at higher risk. Sadly, the answer is yes. Family AIDS was associated with a set of family risks: hunger, abuse and intimate partner violence. Past-year incidence rates of suicide attempts rose from 2% for adolescents with none of these, to 6% with all. Suicide planning rose from 2% to 13%. This means that family AIDS has severe effects on adolescent mental health. It is essential that we reduce AIDS-associated adversities such as abuse and food insecurity. It is also essential that we provide psychosocial support. Without this, too many AIDS-affected adolescents feel that there is no way out but suicide. But there is also good news. In another paper presented this week, we find that there are interventions that work. Social Protection, such as government cash transfers and psychosocial support from parents and teachers can reduce adolescent mental health problems. It can also reduce hunger and other impacts of family AIDS. By doing this, cash plus care can reduce HIV-risk behaviours for our most vulnerable adolescents.

**Ashley Grosso, United States**

Prize: IAS/ANRS Young Investigator Awards: E

Abstract: Prevention and treatment needs of women who started selling sex as minors

Contact: grossoas@gmail.com

Dr Grosso is a research manager with the key populations program of the Center for Public Health and Human Rights in the department of epidemiology at the Johns Hopkins Bloomberg School of Public Health, where she currently works on studies with female sex workers and men who have sex with men in settings including Senegal, Lesotho, and Cote d'Ivoire. Her abstract "Prevention and treatment needs of women who started selling sex as minors" was based on data collected through respondent-driven sampling of female sex workers in Burkina Faso, Swaziland and Togo and snowball sampling of female sex workers in the Gambia.

Dr Grosso received a PhD in public administration from Rutgers University. She received a master's degree in non-profit management from The New School and a bachelor's degree in international relations

from Seton Hall University. Before joining Johns Hopkins, Dr Grosso was a public policy fellow at amfAR, The Foundation for AIDS Research where she conducted research on financing for programs serving men who have sex with men through The Global Fund to Fight AIDS, Tuberculosis and Malaria. Dr Grosso is also the founder of the AIDS Museum, a non-profit organization in Newark, New Jersey that educates about HIV through the arts, including exhibits of photographs and paintings by artists living with or affected by HIV.

### **Gilles Darcis, Belgium**

Prize: IAS/ANRS Young Investigator Awards: HIV Cure

Abstract: Synergistic activation of HIV-1 expression by compounds releasing active positive transcription elongation factor b (P-TEFb) and by inducers of the NF- $\kappa$ B signaling pathway

Contact: gdarcis@student.ulg.ac.be

Dr Darcis graduated from Liège University School of Medicine in 2011. Since 2011, he has been conducting a research fellowship (National Foundation for Scientific Research), coupled with a residency in internal medicine, with special focus in infectious diseases (Liège University).

Dr Darcis project explores one of the various strategies to purge HIV-1 reservoirs. This approach consists in activating HIV-1 gene expression in latently-infected cells, while maintaining cART in order to prevent new spreading infection. Dr Darcis and his team investigate the reactivation potential of compounds in vitro on several latency model cell lines and ex vivo on cART-treated patient's primary cells. Their results suggest the administration of compounds releasing active positive transcription elongation factor b combined with PKC activators together with continuous cART as a potential strategy to reactivate HIV-1 from latency.

## **WOMEN, GIRLS AND HIV INVESTIGATOR'S PRIZE**

The purpose of the Women, Girls and HIV Investigator's Prize is to encourage research in low- or middle-income countries that can benefit women and girls affected by HIV and AIDS. The US\$2000 is offered by the IAS and UNAIDS, and supported by the International Centre for Research on Women (ICRW) and the International Community of Women Living with HIV/AIDS (ICW).

### **Award Ceremony**

Plenary Session

Tuesday 22 July

Time: 8:20

Award presenters: Jan Beagle (UNAIDS) and Françoise Barré-Sinoussi (IAS)

### **2014 Awardee:**

#### **Xu-Dong Zhang, China**

Prize: Women, Girls and HIV Investigator's Prize

Abstract: Sexual and reproductive health in adolescent female sex workers: Kunming, China

Contact: Xudong.Zhang@UGent.be

Xu-Dong Zhang received her joint master's degree in Social Science at Catholic University of Leuven and Catholic University of Brussels, Belgium in 2003. She works closely with grass-root organizations in

Yunnan by delivering training, providing technical advice and conducting researches together. Xu-Dong Zhang is enrolled for a full-time PhD at the International Centre for Reproductive Health of the Ghent University (Belgium) at 2011. Her research interests lie in identifying vulnerabilities and opportunities to improving reproductive health and rights among adolescent girls who sell sex or/and use drugs.

In 2010, Xu-Dong Zhang received a grant under the Australian Leadership Awards fellowship scheme (AusAID) through National Centre in HIV Social Research of University of New South Wales and Tsinghua University; She received the HIV Research Trust Scholarship from UK in 2011; and Civil Society Visiting Fellows Grant from the Chinese University of Hong Kong in 2011 and 2013 again, these awards nurture her academic career and advance her research in the field of improving health and rights for vulnerable women.

### **PRIZE FOR EXCELLENCE IN RESEARCH RELATED TO THE NEEDS OF CHILDREN AFFECTED**

The Prize for Excellence in HIV Research Related to Children supports investigators whose abstracts demonstrate excellence in research that is likely to lead to improved services for children affected by HIV in low- or middle-income countries. The prize is offered by the IAS and the Coalition for Children Affected by AIDS. This year the US\$2,000 prize will be jointly awarded to two researchers, who submitted outstanding research to AIDS 2014.

#### **Award Ceremony**

Plenary Session

Tuesday 22 July

Time: 8:25

Award presenters: Lorraine Sherr (Coalition for Children Affected by AIDS) and Françoise Barré-Sinoussi (IAS)

#### **2014 Awardee:**

##### **Louise Kuhn, United States**

Prize: Prize for Excellence in HIV Research related to children

Abstract: HIV antibody detection in children who started antiretroviral treatment in infancy

Contact:lk24@cumc.columbia.edu

Dr Louise Kuhn is Professor of Epidemiology at the Mailman School of Public Health and in the Gertrude H. Sergievsky Center, College of Physicians and Surgeons, Columbia University, New York. Her work is focused on prevention of mother-to-child HIV transmission and care and treatment of infants and children with HIV.

##### **Irma Eloff, South Africa**

Prize: Prize for Excellence in HIV Research Related to Children

Abstract: Promoting resilience in young children of HIV-infected mothers in South Africa

Contact: irma.eloff@up.ac.za

Dr Eloff is the dean of the Faculty of Education at the University of Pretoria. Dr Eloff is the founder of the African Deans of Education Forum. In South Africa, Dr Eloff is an NRF-rated researcher, a registered psychologist and she has received several awards for her research in Education and Educational

Psychology. She has studied at the Universities of Pretoria, Stellenbosch and Northwest. During her term as dean, Education at the University of Pretoria achieved a ranking in the top 150 of the world on the World QS World university rankings.

## **IAS TB/HIV RESEARCH PRIZE**

The US\$2,000 IAS TB/HIV Research Prize is an incentive for young and established researchers to investigate pertinent research questions that affect TB/HIV co-infection and operational effectiveness of core TB/HIV collaborative services.

### **Award Ceremony**

Plenary Session

Wednesday 23 July

Time: 8:20

Award presenter: Françoise Barré-Sinoussi (IAS)

### **2014 Awardee:**

#### **Catherine Mary Searle, South Africa**

Prize: IAS TB/HIV Research Prize

Project: A review of paediatric patients with TB initiated on ART at primary health care clinics in KwaZulu-Natal, South Africa

Contact: csearle@match.org.za

Catherine Searle is the Director: Health Systems at MatCH (Maternal, Adolescent & Child Health Systems), an organisation focusing on health systems strengthening and operations research affiliated to the University of the Witwatersrand's School of Public Health. She has been working in the field of HIV research and service delivery for over 14 years and has a Master's Degree in Sociology from the University of the Witwatersrand in Johannesburg, South Africa. MatCH has had a series of grants from the US President's Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID) to support comprehensive HIV programmes in KwaZulu-Natal province in South Africa. Catherine Searle currently oversees activities that support the implementation of the provincial HIV programme through training, capacity building, monitoring & evaluation, strategic planning and technical assistance. The project supports 118 public sector health facilities in two districts and has seen 260,000 HIV infected adults and children commenced on ART over a 6 year period. Searle also supports a large medical male circumcision project in four districts in the province. To date this project has circumcised over 70,000 men.

Her winning abstract is based on routine data collected at 39 facilities in eThekweni district on paediatric patients initiated on ART who were co-infected with TB from 2004-2013. The burden of disease of TB in children is unknown but available evidence suggests that 15-20% of the total disease burden occurs among children and that TB incidence in children is approximately half of that of adults. KwaZulu-Natal had a TB prevalence of 1090/100,000 in 2011 and over 16,000 cases of TB were recorded in children below 15 years, representing 9% of all TB cases recorded. ART coverage among children including those with TB remains low. Co-infection of TB with HIV infection in children is common, and carries a long-term mortality considerably higher than with TB alone. The accurate diagnosis of active TB in children remains a major challenge and is more difficult than diagnosing TB in adults. South African TB and ART

guidelines allow for all co-infected children to be initiated on ART at diagnosis. A retrospective review of 4,375 paediatric patients ever enrolled on ART was undertaken at health care facilities using an electronic register to assess the demographic profile of co-infected children, to look at retention in care rates and to establish treatment outcomes among this cohort of children.

## **AIDS 2014 Nomination Awards**

In addition to the abstract-related prizes, the IAS sponsors nomination awards to recognise exceptional achievements, commitment and leadership in the response to HIV. In conjunction with the 20th International AIDS Conference (AIDS 2014), 1 IAS Presidential Award, 1 Elizabeth Taylor Human Rights Award and 1 Robert Carr Research Award represented by two awardees will be awarded at dedicated award ceremonies.

Awards to Be Awarded at AIDS 2014:

### **ELIZABETH TAYLOR HUMAN RIGHTS AWARD**

The Elizabeth Taylor Human Rights Award recognizes the efforts of individuals who have achieved major breakthroughs or shown exceptional courage in their efforts to advocate for human rights in the field of HIV. The award is supported by the IAS, the Elizabeth Taylor AIDS Foundation and the Foundation for AIDS Research (amfAR) to pay a lasting tribute to Dame Elizabeth Taylor, who has been a highly visible, vocal, and relentless champion of human rights in the HIV field.

### **Award Ceremony**

Opening Session

Sunday 20 July

Time: 18:50

Award presenter: Michael Kirby

### **2014 Awardee:**

#### **Paul Semugoma, Uganda**

Prize: Elizabeth Taylor Human Rights Award

Contact: Semugoma@gmail.com

Dr Semugoma is a Medical doctor, trained in Tanzania and Uganda, who became aware of challenging gaps in HIV prevention and care for sexual minorities in Uganda (and Africa) in 2004. Dr Semugoma started advocacy to address these gaps in Sub-Saharan Africa. Dr Semugoma was involved in the creation of regional groups AFYA Minorite (East Africa) and African Men for Sexual Health & Rights (AMSHeR) and served on the Steering Committee of the Global Forum for MSM & HIV (MSMGF) 2008-2012. From 2009, with the introduction of the Anti-Homosexuality Bill in the Parliament of Uganda, he served as a member of the Civil Society Coalition for Human Rights & Constitutional Law. He was involved in rebuttal, preparing and delivering an assessment of health care considerations before the Parliamentary Legal and Parliamentary Affairs Committee.

Dr Semugoma delivered the Plenary 'Turning the Tide for MSM and HIV' at AIDS 2012 in Washington DC and the Martin Delaney Lecture at CROI 2013. The Anti-Homosexuality Act became law in Uganda on 24 February 2014 and is being challenged in Constitutional Court by a coalition of activists. Dr Semugoma is one of the petitioners. He is currently working with ANOVA Health Institute in South Africa on its Health4Men Programmes. Dr Semugoma is living with partner and family in Cape Town, South Africa.

## **ROBERT CARR RESEARCH AWARD**

The Robert Carr Research Award is a joint initiative of the International AIDS Society (IAS), the International Council of AIDS Service Organizations (ICASO), Human Rights Watch (HRW) and the Johns Hopkins Center for Public Health and Human Rights (CPHHR). The award has been established as a continuation of Robert Carr's vision of collaboration between community, academic researchers and advocates to advance human rights-based policies and practices. Robert Carr's commitment to translating findings from research collaborations between community and academic partners into advocacy efforts, evidence-based programmes and tangible policy is the driving force behind this prize, which will be first announced at the 20th International AIDS Conference.

### **Award Ceremony**

Second Robert Carr Memorial Lecture

Monday 21 July

Time: 18:30

Award presenters: Mary Ann Torres (ICASO) and Joe Amon (HRW)

### **2014 Awardees:**

#### **Marta Vallejo Mestres, Spain**

Prize: Robert Carr Research Award

Project: Sex Work and Violence: Understanding Factors for Safety and Protection

Contact: [marta.vallejo@undp.org](mailto:marta.vallejo@undp.org)

Marta Vallejo Mestres is the Policy Specialist – HIV, Health and Inclusive Local Governance based at the UNDP Asia Pacific Regional Centre in Bangkok. She is an economist by training, with over 13 years' experience in designing, coordinating and implementing programs and advocacy initiatives on sustainable development, health, migration, and human rights both at regional and national levels within Asia and the Middle East, with first-hand knowledge and experience of the UN system acquired from over a decade-long career with UNDP and UNICEF. In UNDP Asia Pacific Regional Centre, Marta Vallejo Mestres has shaped UNDP's portfolios of marginalized groups such as migrants and sex workers. She has coordinated multi country and multi partner sensitive research initiatives and provided advisory services that advocate for migrants and sex workers' right to health and their empowerment. She began working with the United Nations in UNICEF China in 1999 and joined UNDP as a Junior Professional Officer in UNDP Egypt in 2002. She is fluent in English, Spanish and French and proficient in Chinese.

#### **Kay Thi Win, Myanmar**

Prize: Robert Carr Research Award

Project: Sex Work and Violence: Understanding Factors for Safety and Protection

## **IAS PRESIDENTIAL AWARD**

The IAS Presidential Awards aim to recognize the achievements of individuals who demonstrate a long history of leadership and excellence as pioneers or advocates at the forefront of the response to HIV and AIDS. The awards highlight an individual's contribution that results in increased knowledge, skills, creative solutions or evidence-based policies and programmes to enhance the global response to AIDS. The IAS Presidential Awards are recognition awards with no monetary value.

### **Award Ceremony**

Closing Session

Friday 25 July

Time: 16:00

Award presenters: Chris Beyer (IAS) and Françoise Barre-Sinoussi (IAS)

### **2014 Awardee:**

#### **Eric Goosby, USA**

Prize: IAS Presidential Award

Dr Goosby is a UCSF-trained physician who served as Global AIDS Ambassador between 2009-2013 under the Obama administration. In his role as the Global AIDS Ambassador, Dr Goosby was the US's senior global health diplomat, advancing the nation's mission to improve and save lives and foster global sustainability. He oversaw PEPFAR (the President's Emergency Plan for AIDS Relief), the largest public health endeavour in history with over \$45 billion invested in 10 years. He began his tenure in 2009, serving mostly under Secretary of State Hilary Clinton. Dr Goosby has returned to UC San Francisco and leads a new center on implementation sciences and has returned to Ward 86, the AIDS unit at the UCSF-affiliated San Francisco General Hospital and Trauma Center, where he had worked in the early stages of the epidemic.

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## **2014 FELLOWS OF THE HIV AND DRUG USE RESEARCH FELLOWSHIP PROGRAMME**

### **HIV AND DRUG USE RESEARCH FELLOWSHIP PROGRAMME**

With the support of the National Institute on Drug Abuse (NIDA), the International AIDS Society (IAS) and the French National Agency for Research on AIDS and Viral Hepatitis (ANRS), have established a joint fellowship programme encouraging HIV and drug use research, with the goal of contributing to advances in the scientific understanding of drug use and HIV, while fostering international collaborative research on HIV and drug use.

The fellowship programme is awarded as a stipend of US\$75,000 in two categories: to a junior scientist for 18 months of post-doctoral training, or to a well-established HIV or drug use researcher for 8 months of professional development training at leading host institutes excelling in HIV-related drug use research.

### **Award Ceremony**

Plenary Session

Wednesday 23 July: HIV and Drug Use Research Fellowship

Time: 8:23

Award presenters: Jacques Normand (NIDA), Françoise Barré-Sinoussi (IAS) and Jean-François Delfraissy (ANRS)

### **2014 Fellows of the HIV and Drug Use Research Fellowship**

#### **Ernest Tafara Chivero, Zimbabwe**

Project: HIV Tat and Cocaine mediated modulation of cAMP: Implications for NeuroAIDS

Contact: [ernest-chivero@uiowa.edu](mailto:ernest-chivero@uiowa.edu)

Dr Chivero is a doctoral candidate in the Molecular & Cellular Biology Interdisciplinary Graduate Program and a Fulbright Science and Technology Fellow at the University of Iowa; he is studying the delay in HIV disease progression in people infected with both GBV-C (a benign virus) and HIV. Several studies have shown that GBV-C/HIV-co-infected individuals live longer than those infected with only HIV. To better understand GBV-C's protective effects in HIV-infected people, Dr Chivero is characterizing immune cells targeted by GBV-C for infection and how their activation pathways and functions are affected. He received his bachelor's and master's degrees from the University of Zimbabwe and Africa University. Prior to his current PhD studies, Dr Chivero was employed as a scientist and programme leader at the Scientific and Industrial Research and Development Centre (SIRDC), a research institute in Zimbabwe.

Dr Chivero's HIV and Drug Use Research Fellowship at the University of Nebraska Medical Centre will focus on understanding how HIV tat protein and drugs of abuse co-operatively modulate neuroprotective pathways to worsen HIV-associated dementia. His research is motivated by his desire to provide technical solutions in alleviating the suffering he has seen in HIV-infected people in southern Africa, which still harbours a high burden of HIV infection and low access to antiretroviral therapy.

**Trupti Ishwar Gilada, India**

Project: The effect of alcohol and substance abuse disorder on viral and host events during early HIV infection: genital viral load decay, transmitted drug resistance and host inflammatory markers

Contact: [trupti\\_gilada@yahoo.com](mailto:trupti_gilada@yahoo.com)

Dr Gilada was born and brought up in Mumbai, India. She completed medical school and her MD in Internal Medicine (in 2012) from Seth GS Medical College and KEM Hospital, Mumbai. She subsequently worked as a consultant physician at Unison Medicare and Research Centre, India's first comprehensive HIV/AIDS clinic. Dr Gilada then worked at Harvard School of Public Health AIDS Initiative with Dr Max Essex as a post-doctoral fellow for a year. She studied the prevalence and characteristics of transmitted drug resistance in HIV-1-positive women in Tanzania, and also worked on a project to design a low-cost drug resistance testing technique.

Dr Gilada's fellowship is on characterizing the impact of alcohol and substance abuse on viral and host events during early HIV infection, namely genital viral load decay, transmitted drug resistance and host inflammatory markers. It will involve studying acutely or recently infected men who have sex with men and transgender women associated with alcohol use disorder in Lima, Peru. This study will provide a foundation for better management protocols in substance-abusing HIV-infected individuals and for modelling the impact of a multi-component intervention, namely treatment of alcohol and/or drug abuse, along with detection and management of acute HIV infection, which will help reduce onward community-wide transmission.

**Andrew Guise, United Kingdom**

Project: Translating the promise of methadone for HIV care: a qualitative study of implementation in Kenya

Contact: [andy.guise@lshtm.ac.uk](mailto:andy.guise@lshtm.ac.uk)

Dr Guise is a research fellow at the London School of Hygiene and Tropical Medicine. He is currently working with colleagues from the Kenyan AIDS NGOs Consortium, University of Nairobi, the International HIV/AIDS Alliance and University of California San Diego (UCSD) to study HIV and harm-reduction services in Kenya and support their development. Recent research has focused on access to HIV care for people who inject drugs (IDUs) and how shifts to injecting drugs are determined by the broader risk environment.

Dr Guise will be starting an HIV and Drug Use Research Fellowship with UCSD, focused on studying the introduction of methadone in Kenya in support of existing collaborations there. This work adopts in-depth qualitative approaches to explore with IDUs how their experiences and access to HIV care are shaped by the structural violence and marginalization created by political and economic inequalities. Dr Guise's previous research was on HIV care and its integration into primary health care in South Africa. In tandem with research, Dr Guise has worked in non-governmental organization (NGO) and government contexts supporting policy and programme development. This has included work to understand and support the link between research and evidence-based policy and practice.

**Nicholas Peter Fraser Thomson, Australia**

Project: Arresting HIV: Identifying and evaluating the impact of efforts to enhance and scale up partnerships between law enforcement and HIV programs working with people who use drugs on HIV and Hepatitis C incidence and risk behaviour among PWUDs in selected high priority countries across South, South-East and Central Asia

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Contact: nicholast@unimelb.edu.au

Dr Thomson recently returned to Melbourne after 12 years in South-East Asia as part of a Chiang Mai University and Johns Hopkins School of Public Health research collaboration that focused on illicit drugs and HIV in Asia. For a large part of this project, he worked as an ethnographer for the HPTN 037 study looking at peer-based interventions with IDUs. Simultaneously, he based his PhD in a large NIDA-funded study investigating the implications of large-scale methamphetamine availability and use on HIV/STI risk for individuals and, indeed, on public health given the large numbers of people caught up in prisons and detention centres on methamphetamine-related drug charges. His research, policy and advocacy efforts explored peer-based and community-based options for enhancing harm-reduction responses to both injecting and non-injecting drug users and then developed into the building of community mobilization for structural changes, built around multisectoral collaborative partnerships between criminal justice and public health. The research efforts focused on working towards keeping young people out of criminal justice systems while promoting community-based health and social interventions to reduce the harm associated with illicit drug use. He worked across all Mekong countries with many UN and bilateral agencies, specifically examining the opportunities to influence police reform in the context of HIV and public health. The premise of the work was that public security actors had significant ability to influence the environment for the delivery of HIV services to key affected populations, but there was also a need to understand their drivers and motivations, which were often not public health imperatives.

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## **2014 GRANTEES OF THE CREATIVE AND NOVEL IDEAS IN HIV RESEARCH GRANT PROGRAMME**

### **CREATIVE AND NOVEL IDEAS IN HIV RESEARCH GRANT PROGRAMME**

In collaboration with the U.S. Centres for AIDS Research and the U.S. National Institutes of Health, the IAS awards for the fourth time the grant programme “Creative and Novel Ideas in HIV Research” (CNIHR). In 2014, the CNIHR program welcomes innovative proposals from early-stage scientists without prior experience in HIV research to answer essential questions in HIV research, including emerging issues of long term survival with HIV infection, prevention of HIV transmission, and research toward a cure.

Eleven research grants worth up to US\$150,000 per year for one to two years will be awarded at AIDS 2014. The initiative aims to foster cross-disciplinary research, promote novel ideas and aid in the success of investigators at an early career stage. CNIHR grantees from 2013 and 2014 together with their mentors will attend a pre-conference workshop. The workshop provides an opportunity for CNIHR 2013 grantees to report their research progress and for new grantees to present their prospective research projects.

#### **Award Ceremony**

Plenary Session

Monday 21 July: Creative and Novel Ideas in HIV Research Grant Programme

Time: 8:20

Awardees: 10

Award presenters: Jack Whitescarver (NIH) and Françoise Barré-Sinoussi (IAS)

#### **2014 Grantees of the Creative and Novel Ideas in HIV Research Programme**

##### **Qin Feng**

Project: Targeting host factors for modulation of HIV transcription

Contact: qfeng@bcm.edu, phone: 713-798-6247

Dr Feng's current work mainly focuses on the transcriptional coactivator function. She has established the in vitro chromatin assembly/transcription system, and successfully applied this system to dissect the composition and dynamics of the transcriptional coactivator complexes on chromatin. In addition, based on an unbiased screening using a focused siRNA library, Dr Feng and her team have identified JQ1, a bromodomain inhibitor and also a coactivator inhibitor, as an anti-tumour drug for endocrine-resistant breast cancer. In the HIV/SRC-3 project funded by CNIHR, she will bring her expertise on transcription and cancer biology to the HIV field. She will address the coactivator function on HIV-induced transcription, and they might identify novel therapeutic targets for HIV based on this study.

Dr Feng is currently an assistant professor in the Department of Molecular and Cellular Biology at the Baylor College of Medicine. Under the mentorship of Dr Yi Zhang, Dr Feng received her PhD in 2003 in the Department of Biochemistry and Biophysics at the University of North Carolina at Chapel Hill. During her PhD study, she received extensive training in biochemical analysis, including protein purification, histone methylation and acetylation assays, in addition to standard molecular biology techniques. Since 2004, she has obtained postdoctoral training in Dr Bert O'Malley's laboratory to study the biological function of nuclear receptor coactivators. The training in Dr O'Malley's lab has significantly broadened her

knowledge in the field of endocrinology and cancer research. She started her independent research programme as an Instructor at the Baylor College of Medicine in June 2009 after she received a Career Development Award (K01) from NIH/NIDDK.

**Jonathan Fogle**

Project: Epigenetic modulation rescues virus-specific CD8+ T cells from T regulatory cell suppression.

Contact: jefogle@ncsu.edu, phone: 001-919-513-6248

Following coculture with autologous Treg cells, Dr Fogle's team will demonstrate an increase in CD8+ T cell FoxP3 mRNA and a decrease in IL2 mRNA by RT-qPCR and fully characterize the surface expression of markers for CD8+ T cell activation and differentiation. More importantly, they will perform CHIP to demonstrate that FoxP3 occupies the IL2 promoter region in virus-specific CD8+ T cells from FIV+ cats following Treg cell coculture. Finally, using agents that inhibit histone acetylation and DNA demethylation (curcumin and gemcitabine), they will show that blocking epigenetic rearrangements prevents FoxP3 binding to these promoter regions and rescues antiviral function as assessed by CFSE proliferation and ELISpot for antiviral cytokine production.

In 2009, Dr Fogle obtained his PhD from North Carolina State University, Raleigh, North Carolina. Using the feline immunodeficiency model (FIV) for lentiviral persistence, Dr Fogle and his team have clearly demonstrated that virus-activated CD4+CD25+ T regulatory (Treg) cells provide a strong inhibitory signal and induce cell cycle arrest and down-regulation of IL2 in activated CD8+ lymphocyte targets early and progressively during the course of infection. Further, Dr Fogle and his team have shown that Treg cells are activated by FIV infection and induce the expression of the repressive transcription factor FoxP3 in CD8+ T cell targets following Treg cell/CD8+ coculture. Recent findings from his laboratory suggest that early epigenetic changes (histone acetylation and DNA demethylation), while essential for antiviral function, render the CD8+ T cell highly permissive to Treg-induced, FoxP3-mediated repression of this essential cytokine. The central hypothesis is that activated Treg cells exploit virus-induced epigenetic changes in CD8+ T cells to induce dysfunction.

**Joseph Hyser**

Project: Calcium-induced Autophagy by HIV-1 Vpu Viroporin Activity

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Dr Hyser and his colleagues have found that rotavirus induces autophagy through a calcium-dependent signalling pathway involving the cellular kinases, CaMKK2 and AMPK. This signalling pathway is activated by the rotavirus nonstructural protein 4 (NSP4), which functions as a viroporin (i.e., virus encoded ion channel) in the endoplasmic reticulum (ER), and NSP4 viroporin activity is required for rotavirus to induce autophagy. Similar to rotavirus, HIV also induces autophagy and benefits from the non-degradative aspects of the autophagy process. Additionally, HIV replication dysregulates calcium homeostasis in cells and encodes a viroporin called Vpu. However, the mechanism by which autophagy is induced by HIV has not been determined. A large portion of Vpu resides in the ER, and while Vpu can conduct calcium ions in vitro, studies of whether Vpu disrupts calcium in host cells or a role for Vpu in autophagy have not been explored. Using his understanding of viroporins and calcium-induced autophagy, Dr Hyser will investigate whether calcium signalling through CaMKK2 and AMPK is involved in HIV-induced autophagy. Further, he will determine whether Vpu is a calcium-conducting viroporin in the ER membrane and whether this activity is related to the induction of autophagy. These studies are significant to patient care because a Vpu blocker drug called BIT225 is currently being tested in humans in Australia.

Dr Hyser attended Augustana College, where he studied biology and biochemistry and also obtained a major in philosophy. In 1999, he began his doctoral studies at the Baylor College of Medicine in Houston, Texas and, a year later, he joined the laboratory of Dr Mary Estes to study the rotavirus enterotoxin called NSP4. His thesis work examined a novel calcium binding site that regulated the binding of the NSP4 enterotoxin to its cellular receptors ( $\alpha 1\beta 1$  and  $\alpha 2\beta 1$  integrins). Upon graduating with his PhD, he decided to stay in Houston and continue working with Dr Estes. He discovered that NSP4 disrupts cellular calcium homeostasis through being a viroporin, a virus encoded ion channel. This discovery has launched his independent academic career focused on defining the mechanisms used by viruses and bacteria disrupt cellular calcium homeostasis. In May 2014, he accepted a tenure-track position as part of the Alkek Center for Metagenomic and Microbiome Research within the Department of Molecular Virology and Microbiology at the Baylor College of Medicine.

### **Anna Lunemann**

Project: Harnessing lymphoid tissue-based antiviral Natural Killer cell subsets for HIV eradication

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As a postdoctoral fellow, Dr Lunemann initially combined neuroimmunology and basic immunology research under the combined mentorship of Prof Cedric Raine at the Department of Pathology, Albert Einstein College of Medicine, and Prof Christian Münz at the Laboratory of Viral Immunobiology, The Rockefeller University, New York. She had the opportunity to expand her knowledge and scientific skills in both basic immunology and clinical-oriented research while investigating interactions of microglia cells and NK cells, and the role of NK cells in multiple sclerosis. This research led to the characterization of a cytokine-producing CD56bright subset of NK cells that is compromised in MS patients. At the Institute of Experimental Immunology in Zurich, Dr Lunemann continued these studies, focusing on human lymphoid tissue-based NK cells. She recently identified a distinct antiviral lymphoid tissue-based CD56bright NK cell subset, which can restrict Epstein Barr Virus infection. Dr Lunemann is currently in the process of expanding these studies. Here, she plans to investigate the ability of the recently identified antiviral tissue-based NK cells subset to not only control EBV infection, but also to contribute to the elimination of HIV-1-infected cells in vitro and in humanized mice in vivo. Ultimately, she wants to harness this potent and distinct antiviral NK cell subset to eradicate latently HIV-1-infected cells at the site of their persistence in the secondary lymphoid tissues. Thus, based on her previous studies, she wants to expand investigations of the immunobiology of human NK cells in a HIV disease-oriented setting and ultimately harness NK cells for antiviral therapy for eradication of HIV.

Dr Lunemann received her medical degree in neuroimmunology from Charité, Humboldt University, Berlin, Germany, in 2007. From 2009 to 2013, she was a research fellow at the University of Zurich at the Institute of Experimental Immunology. Dr Lunemann's research interest is the human immune system; she is especially intrigued by the innate immune responses as the first line of defense against infections and cancer with particular focus on natural killer (NK) cells. As a physician-scientist, her interest is to combine basic immunology and disease-oriented translational research. During her medical studies, she pursued a basic research dissertation in the area of neuroimmunology under the mentorship of Prof Robert Nitsch investigating microglial cells.

### **Killian Pohl**

Project: Creating Maps of 4D Brain Images to Unravel Dementia Heterogeneity of Aging HIV Population

Contact: [kilian.pohl@sri.com](mailto:kilian.pohl@sri.com)

HIV-Associated Neurocognitive Disorders (HAND) are common and can present in older patients with marked similarities to that of age-related neurodegenerative conditions, such as Alzheimer's disease. The

goal of Dr Pohl and his team is to identify image phenotypes relevant to HAND to better understand the longer-term impact of HIV and improve diagnosis, monitoring and treatment of aging HIV-infected subjects. Unlike existing brain imaging studies in HIV, which group subjects according to presumed clinical markers, Dr Pohl will reflect the anatomical heterogeneity of this population by automatically creating maps of images and their proximity relationships. He will then use these maps to separate the population into cohorts with distinct morphometric patterns and analyse the diagnostic power of these patterns.

Dr Pohl is a senior research scientist at SRI International and a consulting assistant professor at Stanford University. He received his PhD in computer science from the Massachusetts Institute of Technology and was faculty at the Harvard Medical School and the University of Pennsylvania. His main research interest is to develop technology for automatically discovering imaging phenotypes from high-dimensional medical images with the goal of improving the understanding, diagnosis and treatment of diseases.

**Daniel Popkin**

Project: Two-pronged NK harness to seek and destroy the HIV reservoir  
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Dr Popkin is mentored for his CNIHR research project under the guidance of Kevin Cooper, co-inventor of alefacept (FDA approved in 2002 to deplete memory CD4 T cells for the skin disease psoriasis) and Jonathan Karn who is actively pursuing the use of natural killer (NK) cells to eliminate the HIV reservoir via alternate and complementing mechanisms. Dr Popkin was previously trained in mouse models of persistent viral infection, including studying herpesvirus latency and immune exhaustion with the LCMV model of persistent viral infection. Dr Popkin and his mentors propose engaging two co-stimulatory molecules: CD2 (upregulated on the CD4+memory T cell HIV reservoir) and CD160 (NK cell activation receptor) to direct NK cells to seek out the CD2+ HIV reservoir using alefacept (whose mechanism of action is NK-mediated killing of CD4+CD2hi memory T cells). In order to overcome NK hypofunctionality, CD160 will be triggered to help “destroy” one aspect of the HIV reservoir.

Dr Popkin completed his postdoctoral research in 2011 in the laboratories of Michael Oldstone, MD, and Bruce Beutler, MD, in the Department of Immunology and Microbial Pathogenesis and Department of Genetics at The Scripps Research Institute, La Jolla, CA.

**Jie Sun**

Project: Targeting Tfh transcription factors to enhance anti-HIV innate immunity  
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Dr Sun's CNIHR programme focuses on the molecular mechanisms explaining why follicular helper T (Tfh) cells are a main cellular compartment for HIV infection and replication in vivo. It is hypothesized that certain transcription factors, which define Tfh cell lineage and function, promote HIV infection and replication by suppressing key host anti-HIV factors. Furthermore, the potential of the manipulation of Tfh transcription factor expression and function in promoting anti-HIV innate immunity will also be assessed in the proposed research programme.

Dr Sun is currently an assistant professor of paediatrics, microbiology and immunology at the Indiana University School of Medicine, USA. His lab studies host innate and adaptive immune responses to virus infection. Dr Sun received his bachelor and master degrees from Sichuan University and the Chinese Center for Disease Control and Prevention, respectively, in China. He obtained his PhD in cell and molecular biology at the University of Pennsylvania in 2006. From 2007 to 2011, he performed his

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postdoctoral research on viral immunology in the laboratory of Dr Thomas Braciale at the University of Virginia.

**Minjie Wu**

Project: Brain Aging in HIV-infected Women: The Role of Reproductive Aging and Cardiovascular Risk Factors

Contact: [mwu@psych.uic.edu](mailto:mwu@psych.uic.edu)

Dr Wu's study will examine the effects of chronological aging, reproductive aging (i.e., menopause) and subclinical vascular risk factors on brain integrity in midlife HIV-infected women in the Chicago consortium of the Women's Interagency HIV Study (WIHS, CFAR mentor: Dr Pauline M Maki). Multimodal neuroimaging data will be collected to comprehensively evaluate changes in white matter, gray matter and intrinsic brain activities. There is a paucity of studies examining brain aging in HIV-infected women, and there are no studies to date of the effect of menopause on brain integrity within the context of HIV. This study will be the first to examine these effects, which will fill a critical research gap in the understanding of HIV and aging.

Dr Wu is a research assistant professor in the Department of Psychiatry at the University of Illinois, Chicago. Dr Wu received her PhD in bioengineering from the University of Pittsburgh, and completed her postdoctoral training at Northwestern University. Dr Wu has extensive experience in developing innovative neuroimaging methods for functional and structural magnetic resonance brain imaging studies. She has applied these cutting-edge approaches to characterize normative brain development and aging, as well as developmental deviations in neuropsychiatric disorders.

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