PUBLIC POLICY AND NUCLEAR THREATS

BOOT CAMP 2014

PARTICIPANTS

As you progress through the boot camp we hope that you build strong connections with your peers. Getting to know them is a great place to start.

Listed below is the 2014 Cohort for the Public Policy and Nuclear Threats Boot Camp. Coming from a variety of backgrounds and research fields, this year's cohort builds upon the rich tradition of bringing together students and professionals for a meaningful and educational experience here at PPNT.

OMAR **BASHIR**

Omar Bashir is a Ph.D. candidate in politics at Princeton University where he specializes in international relations, formal and quantitative methods, and South Asia. Before attending Princeton, Omar received a BS and an MS in Aeronautics and Astronautics from MIT with internships at Boeing, Lawrence Livermore, and Sandia National Laboratories. He then attended Oxford to study international relations. His MPhil thesis addressed the foreign policy preferences of Pakistan's Islamist groups including their promotion of the state's nuclear arsenal. His research interests now include crisis diplomacy, energy competition, remotely-piloted aircraft, and the politics of the UN Security Council.

CAMERON **BATES**

Cameron Bates is a Ph.D. student in nuclear engineering at the University of California, Berkeley working at Lawrence Livermore National Laboratory. His primary focus is the development of radiation detection technologies for arms control and non-proliferation applications. He is specifically interested in the isotopic characterization of plutonium using ultra--high resolution gamma ray detectors. Cameron completed his BSE in nuclear engineering and radiological sciences at the University of Michigan, Ann Arbor in 2010. For his senior design thesis he worked with a team to design and model a passive gamma ray assay station for nuclear fuel assemblies and develop an algorithm to determine reactor type and burn--up based on ratios of gamma--ray line intensities.

LUCAS **BORON-BRENNER**

Lucas Boron-Brenner is currently a 2nd year graduate student in the radiochemistry department at the University of Nevada, Las Vegas. He received his Bachelors of Science degree in chemistry from the University of Maryland, College Park. His research interests include chromatographic separations of fast prompt neutron activated transition metals found in the urban environment for the production of synthetic post detonation fallout glass and capture cross section measurements. He was previously a Glenn T. Seaborg Nuclear Forensics Summer Fellow at Lawrence Livermore National Laboratory where he characterized fallout spherules from above ground testing done at the Nevada Test Site.

NICK **BRICKNER**

Nick Brickner is a first year graduate student in the nuclear engineering department at University of California, Berkeley. He is pursuing a Ph.D with minors in Applied Nuclear Reactions and Nuclear Security Policy. His graduate research has focused on accelerator-based neutron beam characterization and activation analysis.

WALTER **BUHRO**

Walter Buhro is a first year graduate student at Michigan State University focusing on gamma-ray spectroscopy with intermediate coloumb excitation. Born and raised in Saint Louis, Missouri, Walter previous studied physics at Washington University in Saint Louis. At WUSTL, he worked on a project to study isobaric mass multiplets corresponding to A=8, 12, 16.

ROBERT **CRABBS**

Robert Crabbs is a a fourth-year Nuclear Engineering graduate student at the University of California, Berkeley, pursuing a career teaching physics and nuclear engineering at the university level. His research explores the use of Compton Tracking to measure lifetimes for the exotic, radioactive nuclei produced in particle accelerators. Much of his day is spent thinking in C++, Matlab, and Python. His past research experience lies in nuclear safeguards and he is trained in MCNPX, a Monte Carlo particle-transport code. Robert received his B.S. in Engineering Physics at University of California, Berkeley in 2009.

MICHAELA **DODGE**

Michaela Dodge specializes in missile defense, nuclear weapons modernization and arms control as policy analyst for defense and strategic policy in The Heritage Foundation's Allison Center for Foreign Policy Studies. Her work has appeared in newspapers such as The Washington Times and online venues such as FoxNews.com and The Daily Caller. She holds a master of science degree in defense and strategic studies from Missouri State University and a bachelor's degree in international relations and defense and strategic studies from Masaryk University. She will be starting a doctoral program in political science at George Mason University this fall.

NAOMI **EGEL**

Naomi Egel is a recent graduate of University of California, Berkeley where she studied Peace and Conflict Studies and was invoved in the UC Berkeley Nuclear Policy Working Group. Naomi has worked at the James Martin Center for Nonproliferation Studies in Monterey, CA, and at the US Mission to the Conference on Disarmament in Geneva. She is particularly interested in examining the effectiveness of different multilateral nonproliferation initiatives, as well as the relationship between nuclear energy and nonproliferation.
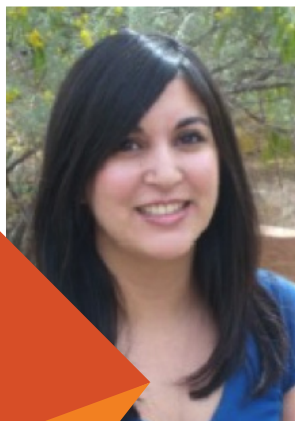
SYLVAIN **FANIELLE**

Sylvain Fanielle holds a Bachelor degree in Law from HELMO and a Master degree in European Law from Maastricht University. He worked as an assistant adviser on disarmament and non-proliferation at the Cabinet of the Belgian Minister of Foreign Affairs. Sylvain was the representative of Belgium in the United Nations Fellowship Programme on Disarmament (2013). He is an associate research fellow at the Center for International Security and Arms Control Studies (CESIM - Paris) and the Group for Research and Information on Peace and Security (GRIP - Brussels). He is also a doctoral candidate at the Research Group on International Politics at the University of Antwerp (Belgium). His research focuses on the security of radioactive materials and sources in medical facilities.

MARC **FITZGERALD**

Marc Fitzgerald is a PhD student in radiochemistry at the University of Nevada, Las Vegas. He received his bachelor of science in chemistry from University of Maryland in 2010. His research interests include understanding how remnant nuclear fuel becomes associated with molten glass during nuclear fallout formation during nuclear explosions, and the use of secondary ion mass spectrometry (SIMS) to measure plutonium abundance in silicate matrices. He was a Seaborg summer student at Lawrence Livermore National Laboratory (LLNL) in summer 2012, and became a Nuclear Forensics Graduate Fellow (NFGF) in the fall of 2012. He is currently working on his PhD thesis at LLNL.

ATHENA **GALLARDO**

Athena Gallardo is a student in the Radiochemistry Ph.D. program at the University of Nevada, Las Vegas. She previously received a B.S. as well as a M.S. in Health Physics from UNLV. She is currently investigating the migration of americium and other nuclides from weapons grade plutonium hot particles in soil cores. This research will help to elucidate the effect of weathering on special nuclear materials and potentially provide access to new signatures for nuclear forensics from the local environment in which the material is present. Athena is advised by Professor Ralf Sudowe.

KALEE **HAMMERTON**

Kalee Hammerton is a first year as a doctoral student in Chemistry at Michigan State University (MSU). She received her BS in Chemistry from Christopher Newport University. There, she also completed a minor in Leadership Studies as a part of the University's President's Leadership Program. Her graduate work is conducted at the National Superconducting Cyclotron Facility at MSU. Her dissertation will focus on understanding how quasifission, known to hinder heavy ion fusion in the production of superheavy elements, is influenced by the ratio of protons to neutrons in the projectile and target nuclei. She is working on the fabrication of a new Coincidence Fission Fragment detector to measure the position and energy of the products of heavy ion fusion reactions.
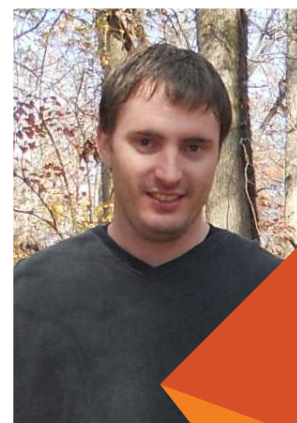

THEO **KALIONZES**

Theo Kalionzes is a program assistant in the International Peace and Security Program at Carnegie Corporation of New York. He works on a grantmaking team that addresses nuclear security issues, global power dynamics, and states in transition. Prior to joining the Corporation, Theo was a consultant in the External Relations and International Cooperation section of the Comprehensive Nuclear-Test-Ban Treaty Organization in Vienna, Austria. He was the primary speechwriter for the External Relations section, and advised the CTBTO executive secretary during his chairmanship of the World Economic Forum Global Agenda Council on Nuclear, Biological, and Chemical Weapons.Theo holds a master's degree in international policy from the Monterey Institute of International Studies, a certificate in nonproliferation studies from the James Martin Center for Nonproliferation Studies, and a BA e in history from the University of California, Berkeley, where he graduated Phi Beta Kappa.

GREGORY **KEEFER**

Gregory Keefer is a Staff Scientist at Lawrence Livermore National Lab. Gregory served active duty in the United States Marine Corp before obtaining a masters and Ph.D. in Nuclear and Particle Physics. He currently works on fundamental physics projects involving nuclear beta decay and neutrino physics. Gregory applies experimental physics knowledge to nuclear counterterrorism project requirements.

JOOEUN **KIM**

Jooeun Kim is a doctoral student in government at Georgetown University, where she concentrates on international relations. Jooeun's research is primarily focused on nuclear deterrence and alliance management. Specifically, her dissertation examines the variation in junior allies' decision to proliferate under the nuclear umbrella. Jooeun holds a BA in political science from Waseda University in Japan, an MA in international affairs from George Washington University, and an MA in government from Georgetown University.

LAURENCE **LEWIS**

Laurence Lewis is a graduate student in nuclear engineering at the University of California, Berkeley. For his dissertation, he is researching nuclear fallout formation and its applications to post-detonation nuclear forensics at Lawrence Livermore National Laboratory. From 2012-2013 he served as a Nonproliferation Graduate Fellow in NNSA's Office of Global Threat Reduction.

HENRY **MAAR**

Henry Maar is a Ph.D. candidate in History at the University of California, Santa Barbara where he studies modern U.S. history, with a particular emphasis on American foreign policy, domestic politics, and the history of nuclear weapons. His dissertation uses the Nuclear Weapons Freeze Campaign of the 1980s as a case study for how public opinion can shape American foreign policy. He recieved his Bachelors degree in Political Science from the University of California, San Diego in 2004, and earned a Master's Degree with Distinction in History from California State University, Northridge in 2008.

KO **NEE**

Ko Nee is a graduate student at University of California, Irvine, with a research focus on nuclear engineering. Her work is directed towards on-line monitoring systems for used fuel separation streams using fiber-optics probes combined with a trained chemometric model, which can be developed from physical-chemical data collected in the lab.

JULIA **NELL**

Julia Nell is a first year radiochemistry graduate research assistant at the University of Nevada Las Vegas. She received a Bachelor of Science degree from Trine University in Angola, Indiana where she majored in Chemistry and Forensic Science and minored in Criminal Justice. Julia spent two summers working as a physical science technician for the Environmental Protection Agency, and interning at a police academy helping to instruct crime scene investigation. Her current research focuses on the preparation and characterization of urban debris samples for nuclear forensic analysis. Julia looks forward to continuing her research and expanding into the realm of public policy and nuclear security.

VAHID **NIAYESH**

Vahid Niayesh is a Ph.D. student in political science at the University of California, Irvine focusing on international security regimes and democratization. His regional focus is on the Middle East with particular interest in Iran-US relations and nuclear non-proliferation strategies. Vahid is also interested in legal and political implications of NPT and CTBT as well as the legality of the use of depleted uranium weaponry in international armed conflicts. He has four masters degrees from three different continents in areas of International Law, diplomacy, international organizations and political science which combine to give him a unique perspective on international security affairs.

BRIAN **RADZINKSY**

Brian Radzinsky is a PhD student in political science at the George Washington University, focusing on international relations. His research interests include nuclear strategy and nonproliferation, conventional military operations, and the intersection of the two. Prior to attending GW, he was a research analyst and project coordinator in the nuclear policy program at the Carnegie Endowment for International Peace. At Carnegie he also coordinated an effort to develop credible political and technical indicators of nuclear proliferation, and managed outreach to government and third-party experts in the U.S., Russia, and China on future arms control issues. He received a BA in political science from Reed College.

CALEB **ROECKER**

Caleb Roecker is a graduate student at UC Berkeley with a research focus on nuclear instrumentation.

ALAN **TAM**

Alan Tam is a second year graduate student at UC Irvine in the Chemical and Material Physics program. Having lived in southern California around the San Gabriel Mountains for most of his life, Alan graduated from UC Riverside in 2013 with a degree in Physics.