



Global Ideas Institute Booklet Series:

PROGRAM LAUNCH

FOOD SECURITY

GII Booklet Series will accompany each lecture by providing additional information and insight into the topic of food security. We strongly encourage you to look into the topics presented in both the lectures and booklet to engage with this material between GII sessions.

MUNK
SCHOOL
OF
GLOBAL
AFFAIRS



UNIVERSITY OF
TORONTO

GLOBAL IDEAS INSTITUTE

WHAT IS THE GII

“Developing global acumen through problem solving on world issues.”

It is becoming increasingly important for students to learn about the world and to think globally. This cutting edge program provides students with the tools, knowledge, and guidance to develop innovative solutions to complex world issues. Over the course of the year, students gain exposure to leading global experts, develop complex problem-solving skills, and deliver pitches to a panel of distinguished experts. Students receive guidance from University of Toronto experts, community and graduate-level mentors during this year long learning process.

Now entering its eighth year, the Global Ideas Institute (GII) is an initiative of the Munk School of Global Affairs. The GII was conceived by Professor Joseph Wong and Professor Janice Stein to provide intensive research and learning opportunities for secondary students. Starting this year, the Global Ideas Institute is an ongoing collaborative program between the Munk School of Global Affairs, University of Toronto Schools, Rotman School of Management’s Integrative Thinking, and World Vision Canada. Participating Grade 11 and 12 secondary student teams of 4-6 students, tackle a global challenge, a real-world problem without a current solution. U of T professors and expert practitioners will present monthly lectures that provide context to the issue. Each student team will also have U of T student mentors to guide and help them to develop innovative ideas to address the problem. Mentoring will take place each month following an expert lecture. Each lecture is supplemented with a package of articles, current research, and additional videos to provide students with context and knowledge. Faculty expertise combined with the support and guidance from U of T mentors will prepare secondary students for a day-long symposium to present their ideas at the Munk School of Global Affairs in April 2018.

GII PROGRAM LAUNCH SPEAKERS

Joshua Folkema

Joshua Folkema is a Business Development Manager at World Vision Canada. World Vision Canada (WVC) is a Christian development, relief and advocacy charity working with communities, families and children around the world to overcome poverty and injustice.



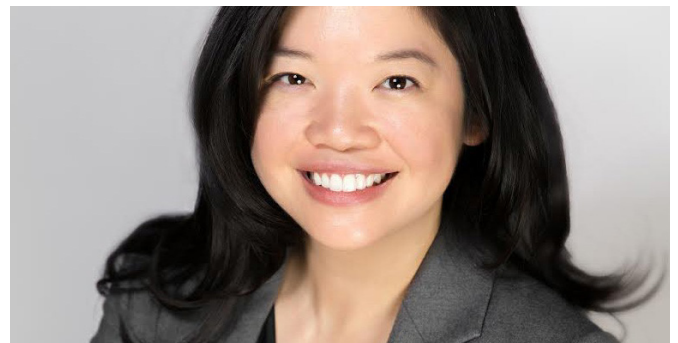
Joseph Wong

Joseph Wong is the Ralph and Roz Halbert Professor of Innovation at the Munk School of Global Affairs, Professor of Political Science, and Canada Research Chair in Health, Democracy and Development. He was the Director of the Asian Institute at the Munk School from 2005 to 2014. Professor Wong has been a visiting scholar at institutions in the US (Harvard), Taiwan, Korea, and the UK (Oxford); has worked extensively with the World Bank and the UN; and has advised governments on matters of public policy in Asia, Africa, the Americas, and Europe. Professor Wong teaches courses in the department of Political Science, the Munk One program and the Munk School of

Global Affairs. Professor Wong's current research focuses on poverty and innovation.

Josie Fung

Josie Fung is Director of the I-Think Initiative at the Rotman School of Management at the University of Toronto. The I-Think Initiative partners with educators to bring skills for creative problem solving to their classrooms and schools. Their approach involves Integrative Thinking (a tools-based process for reaching more productive solutions to unappealing tradeoffs) and design thinking to build concrete metacognitive tools to help students and educators grapple with complexity in a productive way, and design new, and better, solutions to difficult challenges. They do this by developing curriculum, crafting workshop experiences and building a teaching community that inspires and shares tools that work.



GII 2017-2018 ROADMAP

Global Ideas Institute 2017/18 Schedule

Date	Speaker	Speaker Content	Tools	Workshop	Deliverables	Teacher Session
October 13th 2017 (Program Launch)	1. Joshua Folkema (World Vision) 2. Joseph Wong 3. Josie Fung	1. Intro to food security 2. Intro to GII 3. Intro to I-Think Complex Problem Solving Tools	GII Roadmap, I-Think Tools	How does food security relate to you?	Program roadmap	10 mins: GII Q&A 20 mins: GII Teacher Sharing 30 mins: World Vision Q&A
November 2nd 2017	1. Josie Fung 2. Joseph Wong	1. Intro causal modelling (15 min) 2. Reach lecture (30 min and Q&A)	Use I-Think tools from previous week	Practice causal model	Draft causal model	GII Q&A with Joseph Wong, I-Think briefing
November 30th 2017	Valerie Tarasuk	Food Security in Canada (30 min & Q&A)	Interviews/inquiry	Discovery	Interview tools	GII Q&A, primary data collection in a school context
December 14th 2017	Stan Zlotkin	Food Security Globally (30 min & Q&A)	Research Methods/Lessons learned	Defining an intervention point (interview results and casual model review)	Identify intervention points using causal model	GII Q&A, I-Think Q&A, Tools Check-In
January 16th 2018	Panel: 1. The Stop (Rachel) 2. Food Secure Canada 3. L.A. Via Campesina	Expert Panel Q&A	Business Model Canvas	Pitches	1 min pitch on intervention point, expert feedback	Student pitch sessions
February 20th 2018	North York Harvest Food Bank	Case studies: failed solutions	School pair and share of ideas	What worked in a failed solution? Pro pro chart	Pro-pro chart	GII Q&A, Yu-Ling Speaker
March 6th 2018	Dilip Soman	Behavioural economics (30 min & Q&A)	Business Model Canvas	Idea development	Revised idea	GII Q&A with Dilip
March 27th 2018	Adam Sheikh	Polishing your pitch	Pitch support	Pitch prep	Final Pitch	Symposium expectations/working session
April 13th 2018	FINAL SYMPOSIUM (Tentative experts: World Relief, IDRF, Oxfam + GII Speakers)					

2017-2018 CHALLENGE TOPIC

Addressing the Issue of Food Security

“Imagine all the food mankind has produced over the past 8,000 years. Now consider that we need to produce that same amount again — but in just the next 40 years if we are to feed our growing and hungry world.”

- Paul Polman, CEO of Unilever, and Daniel Servitje, CEO of Grupo Bimbo¹

This year, the GII challenge focuses on the issue of food security. Approximately one third of the world suffers from malnutrition,² while 11 percent suffer from undernourishment.³ Constrained agricultural and food production resources, rapid population growth, and overconsumption all stand as major issues underlying these statistics. As acknowledged by the United Nations (UN), food security is one of the greatest threats facing the world today.⁴ Not only is food security an immense challenge in scope, as it reaches every corner of our world, but it is also highly complex. Food must be available, accessible, and nutritious in order for the world’s population to be food secure. Indeed, the challenges associated with ensuring food security are multi-faceted and wide-ranging. It is an issue which intersects with almost every other aspect of a society, economy and environment.

What is food security?

Food security is a term that refers to the consistent availability and accessibility of safe and nutritious food. As such, a person is considered food secure when they are consistently able to access safe and nutritious food. Notably, there is great variance between countries and organizational approaches to measuring food security. Whereas some countries measure security based on undernourishment, others focus on access to food or other indicators.⁵

It is important to recognize that the issue of food security is greater than solely ensuring that food is made available to areas that need it. Even if food is made available to a population in need, factors such as gender, socioeconomic standing, and geographic location play a substantial role in determining whether those in need of food will be able to access the available supply. In order to understand the complexity and depth of this issue, these community-specific determinants must be considered alongside broader factors such as economic growth, international trade flows, and political dynamics in a given population.

¹ Paul Polman and Daniel Servitje, “Speech at the Rio+20 Conference”, June 2012.

² Malnutrition refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients. Julie Gould, “Nutrition: A world of insecurity”, *Nature* 544, 27 April 2017, online: <http://www.nature.com/nature/journal/v544/n7651_supp/full/544S6a.html>.

³ Undernourishment means that a person is not able to acquire enough food to meet the daily minimum dietary energy requirements, over a period of one year. Food and Agriculture Organization of the United Nations, “The FAO Hunger Map”, online: <<http://www.fao.org/hunger/en/>>.

⁴ Food security is recognized by the United Nations (UN) as a global priority for action, as noted in the UN Sustainable Development Goals (SDG). The UN SDG Number 2 aims to ensure year-round access to sufficient quantities of food for everyone on the planet by 2030. While the world has made significant progress towards ensuring universal access to food over the past thirty years, it appears unlikely that the UN SDG will be met. United Nations, “Sustainable Development Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture”, online: <<http://www.un.org/sustainabledevelopment/hunger/>>.

Richard Hodson, “Food Security”, *Nature* 544, 26 April 2017, online: <http://www.nature.com/nature/journal/v544/n7651_supp/full/544S5a.html>.

⁵ The World Bank, “Prevalence of undernourishment”, World Bank Data, online: <<http://data.worldbank.org/indicator/SN.ITK.DEFC.ZS?page=2>>.

Why is food security a problem?

Inadequate food security has dire consequences for healthcare and socioeconomic development. There are four major aspects of the issue of food security outlined below. Although this list is by no means exhaustive it provides an introduction to the complexities of this challenge:

Malnutrition

Malnutrition refers to when a person experiences deficiencies, excesses or imbalances in the intake of dietary energy and nutrients. Malnutrition affects one third of the global population in both developed and developing countries, and is a significant aspect of the food security challenge.⁶

The negative effects of malnutrition start at infancy. Malnutrition of both a pregnant mother and an early-stage infant lead to half of all deaths of children under 5 years old and is a major cause of irreversible stunted physical and mental development.⁷ This stunted development drastically impacts the lives of affected children and their families and is a systemic driver of inequality. Stunted development is primarily experienced by those from heavily disadvantaged socioeconomic background, and this impairment to proper development creates major inequalities of opportunity from the moment a child is born. For this reason, World Bank President Jim Yong Kim has said that “[i]nequality is baked into the brains of 25 percent of all children before the age of five” due to stunted development caused by malnutrition, and that “the only way we can realistically say there is equality of

opportunity is if we bring stunting down to zero”.⁸ The macro-economic toll of stunted childhood development is also substantial, with economists estimating that it can reduce a country’s Gross Domestic Product by as much as 12 percent.⁹

The burden of inadequate food security across all ages similarly poses a major socioeconomic burden in terms of lost economic productivity and healthcare costs. Estimates place the global cost of malnutrition at upwards of USD 3.5 trillion, with health-related drivers of cost coming from increased risk of contracting infectious diseases due to undernutrition, physical and mental impairments caused by a persistent nutrition deficiencies, and increased risk of developing cancer, type 2 diabetes, hypertension, and heart disease due to overconsumption and obesity.¹⁰

Overconsumption

It is important to consider overconsumption and undernourishment as connected issues, as they are commonly present in the same community or household.¹¹ According to the UN Environment Programme, the occurrence of “dual burden households” in which undernourished and overweight or obese individuals are both present, is a growing phenomenon in both developed and developing countries.¹²

This seemingly paradoxical phenomenon is attributable to the fact that, in many cases, overconsumption of unhealthy dietary elements is the result of socioeconomic inequalities as healthy, local options are unaffordable or inaccessible. These same socioeconomic determinants of overconsumption are also linked to undernourishment.¹³

6 Julie Gould, “Nutrition: A world of insecurity”, *Nature* 544, 27 April 2017, online: <http://www.nature.com/nature/journal/v544/n7651_supp/full/544S6a.html>.

7 UNICEF, “Undernutrition contributes to nearly half of all deaths in children under 5 and is widespread in Asia and Africa”, UNICEF Data: Monitoring the Situation of Women and Children, June 2017, online: <<https://data.unicef.org/topic/nutrition/malnutrition/>>.

8 Jim Yong Kim, as quoted in Sarah Boseley, “World Bank to name and shame countries that fail to prevent stunting in children”, *The Guardian*, 30 September 2016, online: <<https://www.theguardian.com/global-development/2016/sep/30/world-bank-name-and-shame-countries-fail-stunted-children>>.

9 1000 Days, “Stunting”, online: <<https://thousanddays.org/the-issue/stunting/>>.

10 Food and Agriculture Organization of the United Nations, “Understanding the True Cost of Malnutrition”, 16 July 2014, online: <<http://www.fao.org/zhc/detail-events/en/c/238389/>>.

11 World Health Organization, “What is malnutrition?”, Online Q&A, 8 July 2016, online: <<http://www.who.int/features/qa/malnutrition/en/>>.

12 United Nations Environment Programme, “The Critical Role of Global Food Consumption Patterns in Achieving Sustainable Food Systems and Food for All”, UNEP Discussion Paper, 2012, online: <<http://www.fao.org/sustainable-food-value-chains/library/details/en/c/265952/>>.

13 United Nations Environment Programme, “The Critical Role of Global Food Consumption Patterns in Achieving Sustainable Food Systems and Food for All”, UNEP Discussion Paper, 2012, online: <<http://www.fao.org/sustainable-food-value-chains/library/details/en/c/265952/>>.

Rapid Population Growth

The Food and Agriculture Organization predicts that population growth will lead to a doubling of global demand for food by 2050.¹⁴ This rapid near-term growth in demand for food requires developing forward-looking solutions to food security, particularly when one considers that the increased demand for food will not be distributed evenly across the globe.

There is a strong correlation between high levels of food insecurity and high fertility rates.¹⁵ This means that the groups of people currently struggling with the greatest burden in terms of securing appropriate levels of food and nutrition will disproportionately face future challenges related to food security.

Food insecurity has also been linked to increased likelihood of violent conflict and political instability, particularly in regard to communal violence focused around scarce resources or sudden increases in food prices.¹⁶ As such, rapid population growth is also important to consider under the lens of conflict based on food insecurity.

Constrained Agricultural and Food Production Resources

Meeting the need for food security, particularly in areas with rapid population growth, can place significant strains on agricultural capacity and other means of food production.

This issue takes different forms depending on the social, economic and geographic aspects of food production in a particular region. For example, in areas that are heavily reliant on farming for food production, increased demand for food can place a burden on water and land supply

and be detrimental to crop quality due to over-farming. This becomes particularly challenging in areas with rapid population growth, as the land and other resources needed to increase farming activity are also needed to house and otherwise support the growing population.

Another example comes in the form of coastal areas reliant upon local fishing for a significant portion of food production. In these areas, increased food demand can lead to over-fishing with negative consequences for the long-term sustainability of fish stock in the area.

These are only two examples of how attempting to meet the challenge of improving food security is problematized by resource constraints. As such, comprehensively understanding the issue of food security requires understanding the context-specific relationship between resource constraints and food security.

Addressing the issue of food security

There are a number of strategies to consider while addressing food security. Innovative methods to increase agricultural productivity in developing areas can play a vital role in ensuring that these areas are able to meet increased demand for food while maintaining the livelihood of people employed in the agricultural sector. Interventions focused on agricultural productivity may be based around embracing technological advancements, facilitating access to financing and business support for small agricultural operations, and integrating genetically modified crops into existing agricultural operations.¹⁷

Solutions can also be based around the improvement of distribution logistics, policy or program-based interventions

14 Population Action International, "Why Population Matters to Food Security", online: < https://pai.org/wp-content/uploads/2012/02/PAI-1293-FOOD_compressed.pdf>.

15 Population Action International, "Why Population Matters to Food Security", online: < https://pai.org/wp-content/uploads/2012/02/PAI-1293-FOOD_compressed.pdf>.

16 Henk-Jan Brinkman and Cullen S. Hendrix, "Food Insecurity and Violent Conflict: Causes, Consequences and Addressing the Challenges", World Food Programme Occasional Paper Number 24, July 2011. Online: <http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp238358.pdf?_ga=2.264575183.1152831328.1502655590-1149203710.1502655590>.

17 For example, see: Matin Qaim and Shahzad Kouser, "Genetically Modified Crops and Food Security", PLoS One, 5 June 2013, online: <<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0064879>>.

based around education or food governance reform, and market-based initiatives designed to improve food security. Solutions need to be tailored to their specific contexts and should consider socio-political factors that may accelerate or inhibit their adoption.

Trends driving this issue globally also present possible areas for intervention. For example, the impact of climate change on food production and the rapid rate of urbanization in developing countries are two issues with large implications for food security that will need to be addressed moving forward.

Finally, there are crosscutting issues that are important to consider when designing any intervention. It is essential to situate any intervention within the scope of preexisting sociopolitical structures and initiatives designed to address food security. Similarly, designing any intervention must take into account the “last mile” of addressing food security. The “last mile” of food security in this sense refers to the behavioural aspects of individual and collective decision-making that may stop those who need food from accessing it.

Challenge guidelines and questions to consider

GII students are challenged to develop innovative technical, policy, education and/or socioeconomic development interventions to improve food security. Students are required to focus their interventions on one community of their choice located in either India or Canada. However, all GII students should consider the potential to scale their solution outside their chosen community.

Support material, including detailed case studies, problem-solving frameworks, access to University of Toronto library resources, and guidance from University of Toronto student mentors and monthly expert speakers, will be provided throughout the GII program year.

GII students should consider the following questions in forming a solution and choosing a geographic area of focus:

1. What is the state of food security Canada and India?
2. What are the impacts of food security in both countries? What are the differences and similarities between how food security impacts these countries?
3. What are the obstacles to ensuring food security? Are they political, economic, geographic, and/or cultural?
4. What efforts, if any, are currently being made to address this problem?
5. Who are the key stakeholders to consider in designing your solution?
6. How will you implement your solution?
7. How will you know if your solution is successful?
8. Can your solution scale up?

Global Ideas Institute 2017-2018: Communication Plan

Pre-session readings will be posted on the GII website and will also be sent to teachers at least two weeks in advance of each GII session. Teachers are responsible for circulating these readings amongst the students participating from their school.

Students will meet with their UofT mentors at every session, but are generally not permitted to directly communicate with their mentors outside of the sessions.

All teacher questions should be addressed to Anne-Rachelle Boulanger at annerachelle.boulanger@mail.utoronto.ca. All student questions, even those directed towards mentors, should be sent to Anne-Rachelle Boulanger via the students' supervising teacher.

**Follow GII on social media for
more links and resources**



Our Twitter and Instagram: @GlobalIdeasTO

READING LIST

Topic	Date	Reading theme
Introduction to Food Security and GII	October 13	Challenge Briefing
What is Complex Problem-Solving?	November 2	Food Security – A complex problem
Food Security in Canada	November 30	Food Security in Canada
REACH	December 14	Food Security in India
Case Studies: Failed Solutions	January 16	Failed solutions
Expert Panel Q&A	February 20	Innovative solutions
Behavioural Economics	March 6	Food security and decision-making
Polishing your Pitch	March 27	Pitching and Presentations
Final Symposium	April 13	

October 13 – Introduction to Food Security

[GII Challenge Brief](#)

November 2 – What is Complex Problem-Solving?

Mandatory reading:

[“Feeding the World Into the Future – food and nutrition security: the role of food science and technology”](#)

Jenny Tian, Brian Bryska and Rickey Yada, *Frontiers in Life Science*, 05 May 2016.

[“Food Security”](#)

Richard Hodson, *Nature*, 27 April 2017.

[“Nutrition: A world of insecurity”](#)

Julie Gould, *Nature*, 27 April 2017.

Recommended reading:

[2017 Global Food Policy Report](#)

International Food Policy Research Institute, 2017.

[Food Security: Everybody’s Business](#)

Sophie Healy-Thow, *Tedx Youth*, 10 February 2016.

November 30 – Food Security in Canada

Mandatory reading:

[Food Insecurity in Canada](#)

PROOF: Food Insecurity Policy Research.

[There’s a Food Security Crisis in Canada and It’s Worse Than You Think](#)

Rebecca Tucker, *VICE*, 07 December 2015.

[Food Insecurity in Community Food Programs among Low-income Toronto Families](#)

Sharon Kirkpatrick and Valeria Tarasuk, *Canadian Journal of Public Health*, 100:2, March 2009

[Conceptualizing Food Security for Aboriginal people in Canada](#)

Elaine Power, *Canadian Journal of Public Health*, 99:2, March 2008.

December 14 – Food Security in India

Mandatory reading:

[Nutrition and Food Security](#)

United Nations in India.

[India’s National Food Security Act \(NFSA\): Early Experiences](#)

Raghav Puri, *LANSA Working Paper Series 14*, 2017.

[Hunger in a Time of Plenty: The Curious Case of Indian Food Security](#)

Neeta Lal, *The Wire*, 30 August 2016.

Recommended reading:

[India's NFSA: Fiscal Assessment and Implementation Challenges](#)

Rajiv Ranjan, FIIB Business Review, June 2016.

[Food Security: How to ensure no one sleeps with an empty stomach](#)

Alka Parikh, Mumbai University, TEDxDAIICT, 08 August 2016.

January 16 – Failed Solutions

Mandatory reading:

[Why Big Data Hasn't Yet Made a Dent on Farms](#)

Eliot Brown, Wall Street Journal, 15 May 2017.

[Lessons in Scaling and Failing](#)

Anjali Sharker, Shameran Abed and Christian Seelos, Stanford Social Innovation Review, 2016.

[Learning From Failure](#)

Eric Nee, Stanford Social Innovation Review, 18 February 2015.

[Failing Up for Social Enterprise Success](#)

Epaminondas Farmakis, Devex, 15 August 2014.

February 20 – Solutions at Scale

Mandatory reading:

[FoodShare's Good Food Programming: Hubs Within a Hub](#)

Cassie Wever, 2015.

[This Woman Has Been A Leader in Toronto Food Security](#)

Wayne Roberts, Torontoist, 3 October 2016.

[Case Study: Reuters Market Light](#)

Peter McNally, Mobile for Development Impact, October 2014.

Recommended reading:

[Connected Farming in India](#)

RML AgTech Ltd, 17 June 2015.

March 6 – Behavioural Economics

Mandatory reading:

[Behavioural Dimensions of Food Security](#)

C. Peter Timmer, Proceedings of the National Academy of Sciences of the United States of America, 27 August 2010.

[How Do We Solve the Last Mile?](#)

Even Nesterak: Interview with Dilip Soman, The Psych Report, 24 October 2015

Recommended reading:

[Nudge nudge, think think](#)

The Economist, 24 March 2012

[Nudge, the Video: Behavioural Economics in Action](#)

Rotman School of Management, 12 June 2013

March 27 – Polishing your Pitch

Mandatory reading:

[How to Pitch a Brilliant Idea](#)

Kimberly D Elsbach, Harvard Business Review, September 2003

[How to Pitch Your Great Idea](#)

Money Talking, WNYC, 8 September 2016

Recommended reading:

[Beyond the pitch deck: Building a strong investor presentation](#)

Mars Discovery District, 06 December 2013.

[Product demonstrations: How to demo your product for investors](#)

Mars Discovery District, 06 December 2013.