The Global Trade Analysis Project: Report, Issues, and Future Directions

GTAP Advisory Board Meeting
Cartagena, Colombia
June 11-12, 2018

Produced by the:
Center for Global Trade Analysis
Purdue University

Table of Contents

Executive Summary **3**

GTAP Advisory Board Representatives and Other Meeting Attendees **4**

GTAP Advisory Board Meeting Agenda **6**

Monday, June 11 6

Tuesday, June 12 7

Mission and Goals **9**

Center Staff, Research Associates, Graduate Students and Visitors **10**

Objectives and Accomplishments **14**

Progress towards Goals over the Past Year 14

Proposed Activities over the Next Year and Beyond 20

The GTAP Data Base and Other Data Projects: Progress and Future Objectives **24**

Research and Model Development: Progress and Future Objectives **27**

Core Funded Projects 27

Externally Funded Projects 27

Publications 28

Presentations 29

Education and Network **32**

Additions to the GTAP Paper Series 32

Courses 33

Conferences 33

Research Fellows 34

GTAP Network, Website and Usage Reports 34

Center Finances and Staffing **35**

Finances 35

Staffing 35

May 21, 2018

Dear GTAP Advisory Board Members,

After last year's anniversary bash, the Center reverted to a more prosaic pace of work. The key focus over the past year has been shaping the final release of the GTAP 10 Data Base. Pre-release 2 was made available to board members in October 2017. Our target date for pre-release 3 has slipped as we have been awaiting some critical data, but expect this to be ready imminently for the board, followed by its public release. We have consolidated work incorporating energy subsidies in the database and are preparing to release a new satellite database of non-greenhouse gas pollutants—such as SO_2 and particulates that have significant negative health externalities. We had a successful rollout of the new version of the GTAP Model and have been busy converting some of the key extensions, including GTAP-E and a new dynamic version of the model. We have also introduced some additional modifications to the standard model intended to improve its flexibility. As per the board's request at our previous meeting, we held a workshop on developing baselines, kindly hosted by the OECD in Paris in January 2018. With over 70 participants, the workshop at the very least revealed an acute demand for enlightenment in this area. We will provide a summary of the workshop at the board meeting but expect a more significant payoff next year as the various working groups proffer key findings and guidelines.

This year we have seen a changing of the guard among our course instructors as Mary Burfisher has decided to scale back her activities. Mary pioneered our introductory (GTAP 101) sequence, as well as the policy oriented, GTAP PTA. As purely online courses, these have broadened the Center's reach beyond those who can afford to attend the standard short course. These courses have been a resounding success. We are all in her debt for these contributions! We are fortunate that Amanda Countryman has taken the mantle of GTAP 101, and are pleased to welcome Terrie Walmsley back to a more formal association with the Center, as she has accepted to take charge of GTAP PTA. The standard Short Course continues to be a central activity and will be held again at Purdue University in August. Due to changes in the dynamic version of GTAP, we have deferred the next Dynamic Short Course until April 2019. We also anticipate a new GTAP-U offering in the coming year. This will be an advanced course, focusing on the Melitz extension of the GTAP Model, (GTAP-HET). After an initial start-up phase, the JGEA is gaining traction and has entered the RePEc ranking—now standing at 69 amongst all ranked economic journals with an impact factor of 13.6. Contributions are always welcome, even if the pipeline is currently well stocked.

Staffing at the Center was stable over the past year. Cicero Zanetti De Lima has taken a post-doc position to assist Tom with his GLASS project (Global to Local Analysis of Systems Sustainability). Tom was elected to be a Fellow of the American Association for the Advancement of Science, following closely in the footsteps of Wally Tyner who received this prestigious nomination last year. As announced last year, the Center is now under the tutelage of a new Department Head, Jayson Lusk, who has provided continuity in the Department's support of the Center.

We are pleased to welcome our latest Board Member, Global Affairs Canada, represented by Shenjie Chen, whom many of you may know from past participation at the annual conference. Representatives from ERIA and McKinsey will also be attending their first Board meeting next month.

Whatever one's position regarding policy decisions over the last year, there is at least one silver lining as we have seen a marked increase in interest in GTAP. Data Base sales have remained robust despite the fact that we are at the end of the version 9 cycle. There has also been a significant uptick in press interest in the Center. We look forward to working with you over the next year as we strive to provide you with improved tools to undertake your essential work.

Sincerely,

Dominique van der Mensbrugghe, Ph.D.
Research Professor and Director of GTAP
Center for Global Trade Analysis
Department of Agricultural Economics
Purdue University

Executive Summary

The list below highlights a number of important accomplishments in the Center during the past year. Detailed discussion follows in the subsequent report.

Data Base and Models Updates/Releases

- Board-Only data releases
  - GTAP 10 Data Base Pre-release 2—October 2017
    - Multi-year IOT allocation and disaggregation of sectors and new sector labels
    - Energy data, APT, domestic support, and income/factor taxes
  - GTAP 10 Data Base Pre-release 3—TBD
    - Increased number of sectors
    - Services trade data
    - EU domestic support, agricultural export subsidies

Network

- Two offerings of GTAP 101
- One offering of GTAP PTA
- 25th Annual Short Course held in West Lafayette
- 2017 Conference and Board Meeting held in West Lafayette, IN USA
- 2020 Conference proposal (Japan) submitted for consideration

Research Projects

- *Journal of Global Economic Analysis* launched, with two releases
- Strong external funding for selective research activities in the Center aimed at advancing the frontiers of GTAP-related data, modeling and policy analysis
- Specifics on projects detailed throughout this report

Staffing

- February 2018 – Cicero Zanetti De Lima hired as Post-Doctoral Research Associate

GTAP Advisory Board Representatives and Other Meeting Attendees

GTAP Consortium Agency Representatives

- **Asian Development Bank** (Mandaluyong City, Philippines)
  Juzhong Zhuang - jzhuang@adb.org (absent)

- **Centre d'Etudes Prospectives et d'Information Internationales** (Paris, France)
  Jean Fouré - jean.foure@cepii.fr

- **Development Research Center of the State Council** (Beijing, China)
  Shantong Li - lishantong333@126.com (absent)
  Jianwu He - jianwu@drc.gov.cn

- **Economic and Social Research Institute, Cabinet Office** (Tokyo, Japan)
  Shinji Yoshioka - shinji.yoshioka@cao.go.jp (absent)

- **Economic Research Institute for ASEAN and East Asia** (Jakarta Pusat, Indonesia)
  Lurong Chen - lurong.chen@eria.org

- **Economic Research Service, US Department of Agriculture** (Washington DC, United States)
  Gopinath Munisamy - gmunisamy@ers.usda.gov (absent)
  Constanza Valdes - cvaldes@ers.usda.gov

- **European Commission, DG Trade** (Brussels, Belgium)
  Lucian Cernat - lucian.cernat@ec.europa.eu

- **European Commission, Joint Research Centre** (Seville, Spain)
  Bert Saveyn - bert.saveyn@ec.europa.eu (absent)
  Antonio Soria Ramirez - Antonio.SORIA@ec.europa.eu

- **Food and Agriculture Organization of the United Nations** (Rome, Italy)
  Aziz Elbehri - aziz.elbehri@fao.org (absent)
  Aikaterini Kavallari - aikaterini.kavallari@fao.org

- **Global Affairs Canada** (Ottawa, Canada)
  Shenjie Chen - shenjie.chen@international.gc.ca

- **Inter-American Development Bank** (Washington DC, United States)
  Paolo Giordano - paolog@iadb.org

- **International Food Policy Research Institute** (Washington DC, United States)
  David Laborde - d.laborde@cgiar.org

- **International Trade Centre** (Geneva, Switzerland)
  Mondher Mimouni - mimouni@intracen.org

- **KPMG Australia** (Canberra, Australia)
  Laurent Cretegny - lcretegny@kpmg.com.au (absent)
  Mohammad Reza Gharibnavaz - rgharibnavaz@kpmg.com.au

- **McKinsey & Company, Inc.** (Waltham, United States)
  Jeffrey Condon - Jeffrey_Condon@mckinsey.com

- **MIT Joint Program on the Science and Policy of Global Change** (Cambridge, United States)
  Sergey Paltsev - paltsev@mit.edu

- **National Graduate Institute for Policy Studies** (Tokyo, Japan)
  Kenichi Kawasaki - k-kawasaki@grips.ac.jp (absent)

- **Organisation for Economic Co-operation and Development** (Paris, France**)**
  Frank van Tongeren - frank.vantongeren@oecd.org (absent)

- **Research Institute of Economy, Trade and Industry** (Tokyo, Japan)
  Mitsuhide Hoshino - hoshino-mitsuhide@rieti.go.jp (absent)

- **The World Bank** (Washington DC, United States)
  Maryla Maliszewska - mmaliszewska@worldbank.org

- **Thünen Institute of Market Analysis** (Braunschweig, Germany)
  Janine Pelikan - janine.pelikan@thuenen.de

- **United Nations Conference on Trade and Development** (Geneva, Switzerland)
  Ralf Peters - ralf.peters@unctad.org

- **United Nations Economic and Social Commission for Western Asia** (Beirut, Lebanon)
  Mohamed Hedi Bchir - hedi.bchir@gmail.com (absent)

- **United Nations Economic Commission for Africa** (Addis Ababa, Ethiopia)
  Stephen Karingi - Skaringi@uneca.org

- **University of Hohenheim** (Stuttgart, Germany)
  Kirsten Boysen-Urban - kirsten.urban@uni-hohenheim.de

- **US Department of Commerce** (Washington DC, United States)
  Chris Rasmussen - chris.rasmussen@trade.gov

- **US Environmental Protection Agency** (Washington DC, United States)
  Richard Garbaccio - garbaccio.richard@epa.gov (absent)
  James McFarland - mcfarland.james@epa.gov

- **US International Trade Commission** (Washington DC, United States)
  Marinos Tsigas - marinos.tsigas@usitc.gov (absent)
  William Powers - william.powers@usitc.gov

- **Wageningen Economic Research** (The Hague, The Netherlands)
  Hans van Meijl - hans.vanmeijl@wur.nl (absent)
  Marijke Kuiper - Marijke.Kuiper@wur.nl

- **World Trade Organization** (Geneva, Switzerland)
  Roberta Piermartini - roberta.piermartini@wto.org (absent)
  Eddy Bekkers - eddy.bekkers@wto.org

Member at Large

- **Mark Horridge** - mark.horridge@gmail.com
  Centre of Policy Studies, Victoria University

Guests of the Board

- **Andres Escobar -** aescobare@unicartagena.edu.co
  Universidad de Cartagena

- **Jan Hagemejer** - j.hagemejer@uw.edu.pl
  University of Warsaw and National Bank of Poland

GTAP Advisory Board Meeting Agenda

Monday, June 11

Biblioteca Fernandez Madrid, San Agustin Campus, Universidad de Cartagena
Cra. 6 #36-100, Cartagena, Bolivar, Colombia

8:00am	**Transportation** (Hotel Caribe to San Agustin Campus, Universidad de Cartagena) *Buses depart the hotel at 8:10am. Please meet in the lobby by 8am.*	
8:30-9:00am	**Welcome Coffee**	
9:00-10:30am	**Welcome and Overview** (Chair: Kirsten Boysen-Urban)	
	9:00-9:30	**Overview and Issues** (Dominique van der Mensbrugghe)
	9:30-10:00	Discussion
	10:00-10:20	**The GTAP Data Base: Version 10** (Angel Aguiar)
	10:20-10:30	Discussion
10:30-11:00am	**Coffee Break**	
11:00am-12:15pm	**The GTAP Data Base: Updates on Core Components** (Chair: David Laborde)	
	11:00-11:20	**IO Tables** (Angel Aguiar)
	11:20-11:30	Discussion
	11:30-11:40	**MRIO Database** (Dominique van der Mensbrugghe)
	11:40-11:45	Discussion
	11:45-11:55	**Agricultural Production Targeting** (Maksym Chepeliev)
	11:55-12:00	Discussion
	12:00-12:10	**Other Updates** (Robert McDougall)
	12:10-12:15	Discussion
12:15-1:30pm	**Lunch**	
1:30-2:30pm	**Education, Outreach, and Strategic Communication** (Chair: Stephen Karingi)	
	1:30-1:45	**GTAP Education and Mentoring Initiatives** (Mary Burfisher)
	1:45-1:55	Discussion
	1:55-2:00	***Journal of Global Economic Analysis*** (Thomas Hertel)
	2:00-2:05	Discussion
	2:05-2:10	**Referencing GTAP** (Thomas Hertel)
	2:10-2:20	Discussion
	2:20-2:25	**PhD students working in the CGTA** (Thomas Hertel)
	2:25-2:30	Discussion
2:30-3:00pm	**Coffee Break**	
3:00-4:00pm	**New Developments at the Interface of Data and Modeling** (Chair: Marijke Kuiper)	
	3:00-3:10	**New Emissions Database** (Maksym Chepeliev)
	3:10-3:20	Discussion
	3:20-3:30	**TASTE 10** (Janine Pelikan)
	3:30-3:40	Discussion (led by David Laborde and Mark Horridge)
	3:40-3:50	**Advances in GEMPACK Software** (Mark Horridge)
	3:50-4:00	Discussion
4:00-5:30pm	**Parking Lot: Other Data and Modeling Issues** (Chair: William Powers)	
5:45pm	**Transportation** (San Agustin Campus, Universidad de Cartagena to Hotel Caribe)	
7:30pm	**Dinner** (Oh Caribe Restaurant, Hotel Caribe, Carrera 1 # 2-87, Bocagrande)	

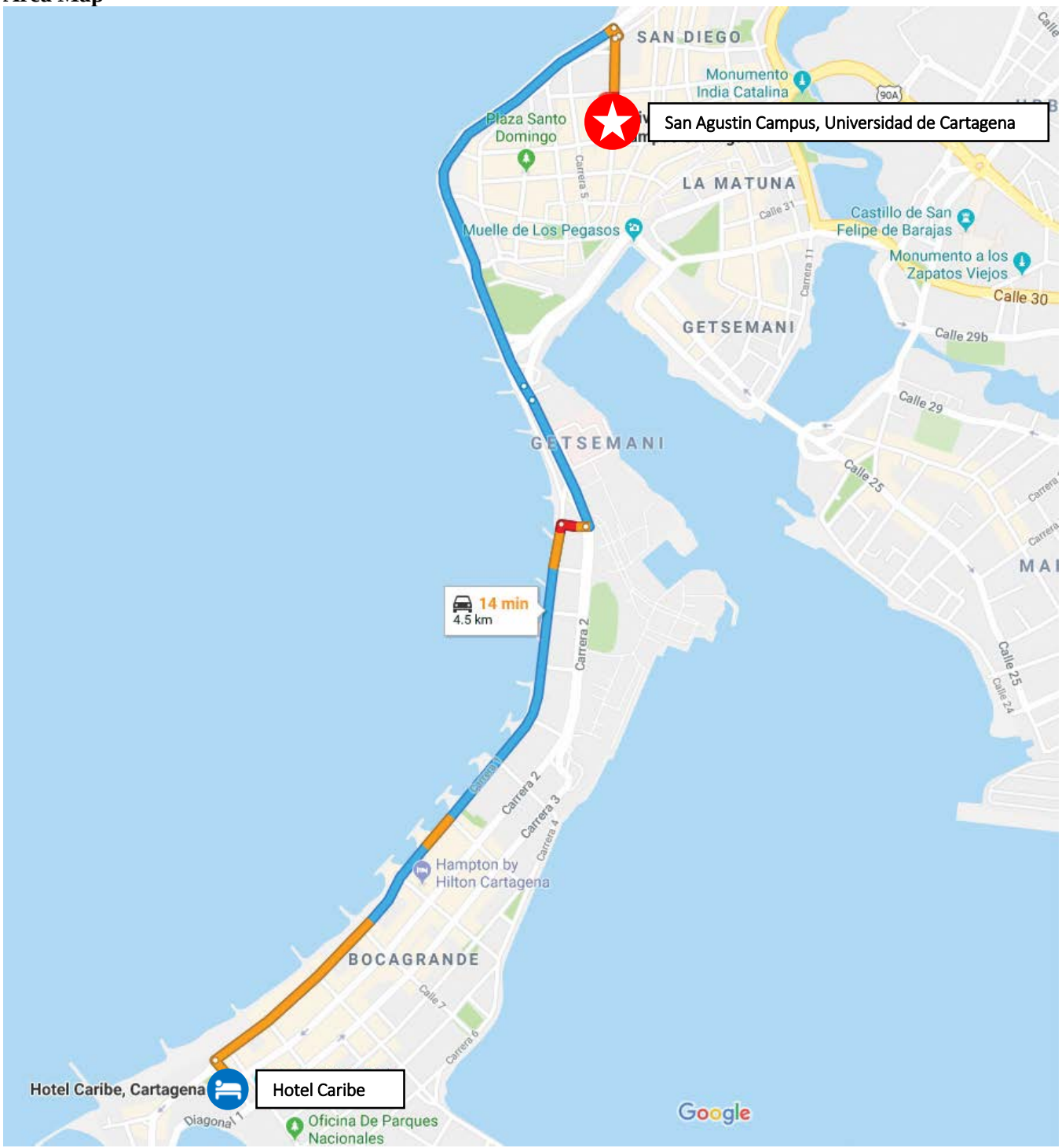
GTAP Advisory Board Meeting Agenda

Tuesday, June 12

Biblioteca Fernandez Madrid, San Agustin Campus, Universidad de Cartagena
Cra. 6 #36-100, Cartagena, Bolivar, Colombia

8:00am	**Transportation** (Hotel Caribe to San Agustin Campus, Universidad de Cartagena) *Buses depart the hotel at 8:10am. Please meet in the lobby by 8am.*	
8:30-9:00am	**Welcome Coffee**	
9:00-10:00am	**The Network** (Chair: Mondher Mimouni)	
	9:00-9:05	**2018-2021 GTAP Research Fellows** (Stephen Karingi)
	9:05-9:15	Discussion, Voting, Future Committee Selection
	9:15-9:20	**2020 Conference Report** (Dominique van der Mensbrugghe)
	9:20-9:30	Discussion and Vote
	9:30-9:35	**2019 Conference Report** (Jan Hagemejer)
	9:35-9:45	Discussion
	9:45-9:50	**2018 Conference Report** (Andres Escobar)
	9:50-10:00	Discussion
10:00-10:30am	**Coffee Break**	
10:30-11:30am	**New Developments at the Interface of Data and Modeling** (Chair: Jean Fouré)	
	10:30-10:45	**Paris Baseline Workshop** (Dominique van der Mensbrugghe)
	10:45-11:00	Discussion
	11:00-11:15	**GTAP and Dynamics** (Erwin Corong)
	11:15-11:30	Discussion
11:30am-12:45pm	**Priorities for Forthcoming Year** (Chair: Lucian Cernat)	
	11:30-11:40	**Center Finances** (Dominique van der Mensbrugghe)
	11:40-11:50	Discussion
	11:50-12:15	**Revisit Priorities for Next Year** (Dominique van der Mensbrugghe)
	12:15-12:45	Discussion
12:45-2:00pm	**Lunch**	
2:00-3:30pm	**Additional Meetings** (Chair: Maryla Maliszewska)	
	2:00-2:30	**Whither the International Trade Architecture** (Ralf Peters)
	2:30-3:00	Discussion
	3:00-3:15	**Services Trade by Mode** (Lucian Cernat)
	3:15-3:30	Discussion
3:45pm	**Transportation** (San Agustin Campus, Universidad de Cartagena to Hotel Caribe) *Anyone not staying for the additional meetings can use a taxi or Uber for their return trip.*	

Area Map


SAN DIEGO
Monumento India Catalina
90A
Plaza Santo Domingo
San Agustin Campus, Universidad de Cartagena
Carrera 5
LA MATUNA
Calle 31
Muelle de Los Pegasos
Castillo de San Felipe de Barajas
Carrera 11
Monumento a los Zapatos Viejos
Calle 30
GETSEMANI
Calle 29b
Calle 29
GETSEMANI
Calle 25
14 min
4.5 km
Carrera 2
Calle 25
Calle 24
Carrera 1
Carrera 2
Carrera 3
Carrera 4
Hampton by Hilton Cartagena
BOCAGRANDE
Calle 7
Carrera 6
Hotel Caribe, Cartagena
Hotel Caribe
Diagonal 1
Oficina De Parques Nacionales
Google

Mission and Goals

Our Mission
To provide leadership in economic policy analysis by fostering collaboration to achieve better data and research outcomes.

We value:
- International collaboration because it increases quality of data and analysis.
- Objectivity and transparency because they are crucial to our data work and analysis.
- Discovery because improving methodology leads to better policy analysis.
- Learning because it creates critical vibrancy both within the Center and in the expanding network and improves the quality of analysis undertaken.
- Engagement because it helps us serve policy analysts and decision makers with better data and analysis.

We believe that:
- Better data leads to better policy analysis, which leads to better policy.
- Reconciling data makes data better.
- CGE modeling provides useful policy insights.
- Avoiding duplication in data production is efficient.
- Collaboration enhances individual efforts.
- Having more trained users enriches policy debates.

Goals:
1. **Data Goal:** To Improve the quality of data products through:
    a. Improving the quality of contributed I-O data
    b. Addition and improvement of other datasets
    c. Monitoring of data quality using comparison programs
    d. Version control and documentation
2. **Research Goal:** To actively participate in quantitative economic analysis of pressing global concern in the areas of Trade and Development and Global Environmental Issues
3. **Model Goal:** To promote further development of GTAP-based models
4. **Education Goal:** To expand and improve education for global economic analysis worldwide
5. **Staffing Goal:** To actively seek and encourage talented staff and graduate students
6. **Collaboration Goal:** To actively seek opportunities for fostering collaboration with institutions around the world
7. **Communication Goal:** To facilitate communication amongst members of the network as well as between the Center and key stakeholders

Center Staff, Research Associates, Graduate Students and Visitors

Center Faculty and Staff

- **Angel Aguiar,** *Research Economist and Data Base Construction Specialist*
  Angel works with the macro datasets and contributors of the regional I-O data for the GTAP Data Base. He has been managing the construction of the GTAP 10 Data Base. Angel also teaches in the annual GTAP Short Course and leads the bi-annual GTAP Dynamic Short Course. He undertakes economic research using the GTAP framework.

- **Zeynep Akgul,** *Post-doctoral Research Associate and Visiting Scholar*
  Zeynep is a Post-Doctoral Research Associate at the Center for Global Trade Analysis and a Visiting Scholar at the U.S. International Trade Commission. Her primary research interests include Computable General Equilibrium (CGE) modeling for international trade policy analysis with an emphasis on firm heterogeneity implementations with the GTAP Model. She has developed the firm heterogeneity module GTAP-HET, which incorporates consumer love-of-variety, endogenous productivity changes, as well as endogenous firm entry/exit into domestic and export markets. She is currently working on the empirical aspects of firm heterogeneity models where she focuses on estimation/calibration of key parameters, such as the shape parameter of productivity distribution and the elasticity of substitution amongst varieties.

- **Uris Baldos,** *Post-doctoral Research Associate*
  Uris is part of the Center's management oversight committee, contributes to the Annual GTAP Short Course and GTAP Dynamic Short Course, advises graduate students, maintains the GTAP-AEZ database framework, and leads model and database improvements for the SIMPLE model of global agriculture. His research interests are on the broad issues surrounding the global farm-food-environment nexus, local-global telecoupling and on global gridded modelling.

- **Ginger Batta,** *Senior Program Manager*
  Ginger manages the proposal phase, logistics, finances, participant relations, execution, and reporting for all events including the GTAP Conferences, Advisory Board Meetings, Short Courses, Dynamic Short Courses, GTAP 101, and GTAP PTA courses. She also manages the sales, distribution, licensing, and reporting for all GTAP products as well as handles general communication with the GTAP Network.

- **Sue Bennett,** *Operations Coordinator*
  Sue assists the Center with university research account processes from proposal to reconciliation and closing; facilitates the tracking and reporting of Center finances and Consortium billing; formats the GTAP Data Base Documentation and online paper series; and assists the Director on general administrative tasks.

- **Maksym Chepeliev,** *Research Economist*
  Maksym works on integrating energy subsidies to the GTAP Data Base, development of the non-GHG emissions data base and substitution elasticities data base. He is also working on agricultural producer support estimates and agricultural production targeting (APT) for GTAP 10 Data Base, as well as development of the new APT procedure for GTAP. Maksym is managing GTAP users support activities. He undertakes research on environmental and resource economics both on regional and global levels

- **Erwin Corong,** *Research Economist*
  Erwin works on integrating domestic margins in the GTAP Data Base and modeling framework. He also runs the construction programs for the GTAP Data Base and updates the GMig2 satellite Data Base. Erwin teaches in the GTAP Short Courses and undertakes research using the GTAP framework. During the past year, he has contributed to the GTAP Model 'facelift' and development of its recursive dynamic variant for use in long term projections.

- **Jeremy Douglas,** *Web and Information Technology Specialist*
  Jeremy is responsible for the design, development, and maintenance of the GTAP website.

- **Alla Golub,** *Research Economist*
  Alla is a Research Economist at the Center working on analysis of energy and climate change mitigation policies. Alla writes competitive grant proposals and serves as principal and co-principal investigator on several projects. Alla also teaches in the annual GTAP Short Courses and bi-annual GTAP Dynamic Short Courses, and produces the GTAP Dynamic Model (GDyn) Data Base.

- **Thomas Hertel,** *Executive Director and Distinguished Professor*
  Thomas focuses on strategic issues and new research directions for the Center, as well as Consortium member development. He also teaches a GTAP-based PhD course, supervises graduate students and is heavily involved in a number of trade and environment-related projects at the Center. He is currently spearheading a Purdue University, Discovery Park 'Big Idea' initiative – GLASS (Global to Local Analysis of Systems Sustainability) aimed at facilitating global, gridded analysis of sustainability issues related to land and water systems.

- **Jing Liu**, *Research Economist and Science Coordinator*
  Jing contributed to developing the 30 arc-min SIMPLE-on-a-Grid global model. This model has been applied to study the impact of sustainable irrigation on global food security and land use change. Jing is currently working on the 5 arc-min SIMPLE-G-US model to incorporate the grid-cell level nitrate leaching and yield responses to fertilizer application and irrigation. This finer resolution grid-resolving model is being used to study the policies that encourage best management practices in order to achieve long-run sustainable agriculture in the US.

- **Robert McDougall,** *Senior Research Economist*
  Robert works on special projects, which significantly improve the GTAP Data Base and Models. This year he has been working on energy, agricultural I-O, and tax data and the handling of I-O tables in the GTAP Data Base construction program.

- **Dominique van der Mensbrugghe,** *Director and Research Professor*
  Dominique oversees the day-to-day activities of the Center, as well as focusing on new initiatives in development of the GTAP Data Base and models and policy applications. He also supervises graduate students, in the context of his ongoing research on trade, development and the environment.

- **Cicero Zanetti De Lima,** *Post-Doctoral Research Associate*
  Cicero is a post-doctoral scholar at the GTAP center. He is contributing to create a complete workflow for grid data and GTAP integration since the preparation of the data, analysis, and dissemination of the results. He is also working on a project to connect GTAP and inVEST models to assess the macroeconomic consequences of enhanced Biodiversity and Ecosystem Services.

Teaching and Research Associates

- **Mary Burfisher,** *Senior Education Advisor, Center for Global Trade Analysis, Purdue University*
  Mary is the former lead course instructor for the GTAP 101 and PTA courses and advises the Center on educational and mentoring matters.

- **Amanda Countryman,** *Assistant Professor, Colorado State University*
  Amanda is a former GTAP graduate student and is currently an Assistant Professor at Colorado State University where her research employs computable general equilibrium modeling techniques to investigate the economic implications of international trade policy, focusing specifically on the impacts of trade reform on agriculture. Amanda is the lead instructor for the GTAP 101 Courses.

- **Russell Hillberry,** *Associate Professor, Purdue University*
  Russell is an Associate Professor with the Department of Agricultural Economics and a Research Associate of the Center. He works in the fields of international trade and economic geography. His current research focuses on the impact of trade facilitation measures and the spatial organization of international production chains.

- **Roman Keeney,** *Associate Professor, Purdue University*
  Roman is an Associate Professor with the Department of Agricultural Economics and Research Associate of the Center. He works on agricultural policy and is the lead instructor for the annual GTAP Short Course.

- **Krishnamurthy Sriramesh,** *Senior Advisor for Strategic Communications, Brian Lamb School of Communication, Purdue University*
  Sriramesh advises the Center on communications and outreach strategy.

- **Farzad Taheripour,** *Energy Economist, Purdue University*
  Farzad is a Research Associate Professor with the Department of Agricultural Economics and Research Associate of the Center. He has developed data and models to introduce bio-fuels into the GTAP framework and link the GTAP Model with water and energy models. He also has accomplished a major revision of the natural gas sector in the GTAP Data Base. He works on emissions due to land use changes associated with the production of first and second generations of bio-fuels.

- **Wallace Tyner,** *James and Lois Ackerman Professor of Agricultural Economics; Senior Policy Advisor, Purdue University*
  Wally advises the Center on policy. Most recently, he has been spearheading a number of large research projects and proposals in the areas of energy, climate change, and biofuels.

- **Terrie Walmsley,** *Managing Director, ImpactECON*
  Terrie is currently the Managing Director at ImpactECON where her she undertakes trade policy studies and develops global CGE models to incorporate supply chains, non-tariff measures, migration, dynamics and household detail into both Gempack- and Gams-based models. Terrie is the lead instructor for the GTAP PTA Courses.

Graduate Students[1]

- **Alma Cortes Selva** (Nicaragua)
  Alma is a PhD student in the Department of Agricultural Economics. She is a production editor for the *Journal of Global Economic Analysis*; and is currently working on the updating of the GTAP Short Course to GTAPv7. Along with Dr. van der Mensbrugghe, she is working on a dynamic recursive model to understand the impact of a change in the energy matrix in the context of a developing country (Nicaragua).

- **Iman Haqiqi** (Iran)
  Iman is a PhD student in the Department of Agricultural Economics. He has worked on agricultural producer support estimates and agricultural production targeting for GTAP 9 Data Base. He is responsible for constructing and development of GTAP Water Data Base. He is also working on CGE modelling of water, irrigation, and land use.

- **Kayenat Kabir** (Bangladesh)
  Kayenat is a PhD student in the Department of Agricultural Economics. She is a publishing editor for the

[1] See supplementary materials (www.gtap.agecon.purdue.edu/events/Board_Meetings/2018/supp_material.asp) for CVs.

bi-annual *Journal of Global Economic Analysis*; and served for as the online instructor for the GTAP Short Course as well as the teaching assistant for AGEC 618 Computable General Equilibrium Modelling (an extended version of the GTAP Short Course). She is currently under Purdue sponsored PRF fellowship to work on climate change, agricultural productivity, and food security issues in Niger.

- **Verena McClain** (Germany)
  Verena is a PhD student in the Department of Agricultural Economics. She is currently working on a project to re-estimate the demand elasticities for the GTAP Data Base.

- **Anton Yang** (United States)
  Anton is a PhD student in the Department of Agricultural Economics. He provides support for the GTAP's data team. His research agenda involves non-homothetic preferences with external economies of scale in quantitative trade models and empirical foundation of demand systems in the GTAP Model. In addition, Anton co-develops the SIMPLE-MAIDADS Model which integrates modified AIDADS Model into the SIMPLE Model of global food supply and demand. The model will be used to analyze the relative importance of income and population growth in driving global food output to 2050.

- **Guolin Yao** (China)
  Guolin is a PhD candidate in the Department of Agricultural Economics. Guolin and her advisors Dr. Hertel and Dr. Taheripour work on an NSF project about complex dynamics of telecoupled human and natural systems through examining economic and environmental spillover impacts of soybean international trade focusing on China, US, and Brazil. This research aims to alter the GTAP-BIO model and its data base to distinguish between GM and Non-GM soybeans. Guolin will use the modified model to examine recent evolutions in production, consumption, and trade of soybean across the world.

Visitors to the Center

- **Talita Pinto**, Universidade Federal de Viçosa (Brazil)
- **Dave Donaldson**, Massachusetts Institute of Technology (United States)
- **Andres Rodriguez-Clare**, University of California, Berkeley (United States)

Objectives and Accomplishments

Progress towards Goals over the Past Year

Below is an assessment of our progress towards the core objectives outlined last year in the Board Meeting summary:

1. **Data Goal:** To Improve the quality of data products

Tasks	Responsibility
Improving the quality of contributed I-O data (core)	**Aguiar**
Primary Priorities	
• Work with contributors to improve I-O tables (US, others)	Aguiar
Ongoing. Incorporated 6 I-O tables' updates.	
• Compare IOT with data base to work with contributor on where the largest adjustments occur	Aguiar
Part of this year's objectives. Expected to be implemented in second part of 2018.	
• Energy subsidies integration to the GTAP Data Base	Chepeliev, McDougall
GTAP 9.2 Data Base with incorporated fossil-fuel consumption subsidies was produced; corresponding paper documentation is under revision	
• Development of the substitution elasticities data base (secondary priorities/satellite data)	Chepeliev
Draft of the capital-labor substitution elasticities database was presented at the AAEA 2017 meeting; further progress expected in 2018	
Secondary Priorities	
• Finalize the guidelines for contribution of Input-Output and Supply and Use tables with domestic margins for future GTAP Data Base versions	Corong
Ongoing work: Document with suite of data programs to be made available after the public release of GTAP 10.	
• Finalize the implementation of the dwellings module	McDougall
Methodological discussion conducted.	
Addition/Improvement of Datasets used in GTAP Data Base (core)	**Aguiar**
Primary Priorities	
• Services Trade	McDougall
Awaiting inputs from external contributor.	
• Program data separation (build programs for GTAP 11 Data Base)	Corong
Work will resume after the 2018 Cartagena conference.	
• Data and methodological improvements in commodity and income/factor taxes	McDougall
Trial version prepared incorporating methodological improvements.	
• Data and processing improvements in commodity and income/factor taxes	McDougall

New data collected, initial processing improvements made.	
• Export subsidies update	Aguiar, D. van der Mensbrugghe
Retrieved information from EU sources and merged with WTO collection by Jayson Beckman; part of v10 pre-release 3.	
• Improved Agricultural Production data (FAO and OECD consistent) and AG-IOT	McDougall, Chepeliev
GTAP 9.2 Data Base with new APT procedure was produced; corresponding paper would be presented at GTAP 2018 conference.	
• CDE parameters	D. van der Mensbrugghe, A. Yang
Working to re-estimate the parameters of the CDE function directly using a new procedure. Current procedure estimates parameters of the M/AIDADS function. Resulting elasticities are used to calibrate CDE function.	
Secondary Priorities	
• Examine possibility of targeting trade balances	McDougall
Method designed.	
• Examine the availability of NSO data (production, etc., by year) to update I-O tables as part of FIT process (when redo FIT)	Aguiar
Long term goal. While we are in the lookout for consistent dataset for the world, there is no concrete information that we have obtained.	
• Examine integration of biofuels into standard data base (in addition separation of heat and power)	Chepeliev, McDougall, Taheripour
Work in progress	
• Domestic support, PSE database for Latin America and Africa – MAFAP	van Tongeren, Balié, Boulanger
No progress other than the updates of what is available from OECD, which include selected Latin American Countries.	
• Agricultural Production Targeting (APT) integration into FIT and other industry targeting	McDougall
Trial version prepared.	
Addition/Improvement of Satellite Data (core)	**Aguiar**
Primary Priorities	
• Domestic Margins	Corong
Domestic margins will be a special release of GTAP 10.	
• Plan about new satellite datasets (e.g. MRIO)	Carrico, van der Mensbrugghe
A full version of the GTAP v9 MRIO database is ready for testing and review. We are assessing the feasibility of production a V10 MRIO database.	
Secondary Priorities	

• Development of the GTAP non-GHG emissions data base	Chepeliev
GTAP 9.2 non-GHG database draft was produced; documentation is under revision	

2. Research Goal: To actively participate in quantitative economic analysis of pressing global issues

Tasks	Responsibility
Firm Heterogeneity	
Primary Priorities	
• USITC project to further develop policy application	Akgul
The USITC project started on May 31, 2016 and focuses on further development of GTAP-HET model and parameterization. Two papers related to the project have been published on the USITC Working Paper Series in 2017. The first paper is titled as "One Model to Rule Them All? The Importance of Firm Heterogeneity in CGE Modeling of The Gains From Trade" and it examines the new gains from trade under firm heterogeneity, discusses whether welfare gains under Melitz, Krugman and Armington models are equivalent or not, and summarizes the recent advancements in CGE implementations of firm heterogeneity. The second paper is titled as "Using Power Laws to Identify the Structural Parameters of Trade Models with Firm Heterogeneity" and it focuses on estimating the shape parameter of Pareto distribution and elasticity of substitution across varieties by using firm-level data. Currently, we are working on two more papers. One of them is a documentation of the updates on the GTAP-HET model. The second one is the implementation of the parameter estimation with a policy analysis. As a part of the project, we also provide training sessions in ITC to build capacity on practical uses of GEMPACK to conduct policy analysis with GTAP simulations. The USITC project will be extended for an additional year, until August 30, 2019.	
Trade and Development	
Primary Priorities	
• Continue to publish papers on trade, poverty, migration/labor and global supply chains	Staff and Graduate Students
Global Energy and Environmental Issues	
Primary Priorities	
• Continue to publish papers on energy and environmental issues with a special focus on the land-water-energy-climate nexus	Staff and Graduate Students

3. Model Goal: To promote further development of GTAP-based models

Tasks	Responsibility
Model Updates	
Primary Priorities	
• Consolidate changes in new standard GTAP Model. Combine new standard model with some of the model variations (GTAP-E, GDyn).	van der Mensbrugghe, Aguiar, Corong
The new standard model has undergone further testing and consolidation. Some additional features have been added to the model to enhance flexibility and replicability. All price and quantity indices have been converted to Fisher 'ideal' price indices (and are also chain-based for the dynamic version of GTAP). Upward sloping supply curves have been introduced for (aggregate) land and natural resource factors. Foreign closure has been clarified and augmented	

with two additional closure options. The new standard model is being extended to cover GTAP-E (to be ready in time for the summer short course) and a new dynamic version.	
Software	
Primary Priorities	
• Software suite for the standard GTAP Model in GAMS: aggregation, filtering, Altertax and comparative static simulations	Corong, Aguiar, van der Mensbrugghe
The suite has been developed. The aggregation package is relatively straightforward and mimics the functionality of the GEMPACK-based GTAPAgg. The filtering routine, a process of selectively deleting small value flows from a database, is based on a program originally developed by Tom Rutherford, further developed by Wolfgang Britz, with some additional adjustments made by Center staff. The Altertax routine emulates the original Altertax methodology (Malcolm 1998). The suite has been designed to service both the standard GTAP Model in GAMS and the Envisage Model, both maintained at the Center.	

4. Education Goal: To expand and improve global economic analysis education worldwide

Tasks	Responsibility
Education Plan	**Various**
Primary Priorities	
• 2017 GTAP Short Course (Purdue)	Keeney, Batta, Douglas
The Center held the 25th Annual Short Course in Global Trade Analysis in July 2017 on the campus of Purdue University for 25 attendees, two of which were awarded fellowships by the Center.	
• GTAP 101 Courses	Burfisher, Batta, Douglas
Two successful offerings of GTAP 101 were held in 2017, producing 34 "graduates". The Center funded six scholarships for these courses. Demand for this course remains steady and graduates are continuing to feed into the standard short course and GTAP PTA Course.	
• GTAP PTA Course	Burfisher, Batta, Douglas
One GTAP Preferential Trade Agreements (PTA) Mini-Course was held in 2017 for 17 students. Feedback and interest in this course remain positive.	
• Update instructional materials for GTAP Model updates	Keeney, Cortes Selva, Aguiar, Chepeliev, Corong, McDougall, van der Mensbrugghe
Draft updates of on-site course materials have been distributed to the instruction team for Short Course 2018. Update of online course materials will begin mid-May with review of online materials as current class is completing the weekly modules. The online course update will first be used for Short Course 2019.	
Secondary Priorities	
• Further investigate development of online mini-courses on special topics	Burfisher, van der Mensbrugghe, Hertel
Discussions and planning for a course on firm heterogeneity are underway with the goal of offering the first course in 2019. Zeynep Akgul is developing and will lead the course.	

• Continue development and implementation of an "Alumni Outreach/Continued Learning Initiative" for short course graduates	Keeney, Batta, Douglas
400 percent growth in @GTAP_Purdue twitter following over the last 8 months to increase ability to reach alumni and network. Focus on development of continued learning will commence after completion of Short Course update to version 7 model.	
• Investigate potential incorporation of our courses with Purdue/FutureLearn	van der Mensbrugghe, Hertel, Keeney, Burfisher, Aguiar
No update available	

5. Staffing Goal: To actively seek and encourage talented staff and graduate students

Tasks	Responsibility
Primary Priorities	
• Continue to implement the new program to mentor our graduate students.	van der Mensbrugghe, Batta, Grad Student
The Center held its second orientation for new graduate students and researchers in 2017 and will continue to do so as needed.	
• Look into hiring another (set duration) web designer/programmer to help redesign and develop the GTAP website	van der Mensbrugghe
In the process of advertising and hope to hire by the end of the summer.	

6. Collaboration Goal: Actively seek opportunities for fostering collaboration with institutions around the world.

Tasks	Responsibility
GTAP Conferences and Board Meetings	**Batta, van der Mensbrugghe**
Primary Priorities	
• 2018 Conference and Board Meeting (Cartagena, Colombia)	Batta, van der Mensbrugghe
Planning for both events is well underway. Andres Escobar (Universidad de Cartagena) will present an update at the board meeting on the conference.	
• 2019 Conference Proposal (Warsaw, Poland)	Batta, van der Mensbrugghe
A representative from the Faculty of Economic Science, University of Warsaw will present an update on the planning for the 2019 board meeting and conference. The conference program committee will meet over lunch during the conference to discuss plenary speakers, organized sessions, and funding.	
• 2020 Conference Proposal (Tokyo, Japan**)**	Batta, van der Mensbrugghe

Kenichi Kawasaki and the National Graduate Institute for Policy Studies prepared and submitted a proposal for the 2020 board meeting and conference to be held in Tokyo. This proposal was circulated to the board in November 2017. Further information on this proposal will be presented during the board meeting, followed by a vote.	
• 2021+ Conference Proposals	van der Mensbrugghe, Batta
Interest to host the 2021 board meeting and conference at a university (not Purdue) in the United States has already been established. The Center welcomes any additional interested parties to make contact so a proposal can be developed.	
Seek partners/funding opportunities for collaboration (core)	**Various**
Primary Priorities	
• IAMC & EMF	van der Mensbrugghe
The Center participated in the 10th Annual Integrated Assessment Consortium Meeting that was held in Recife, Brazil. The IAMC meeting provides an ideal forum for seeing the latest research on climate change and sustainable development and keeping tuned into the data and modeling needs of this important community.	
• AGRODEP	van der Mensbrugghe
The Center maintains its relations with AGRODEP—a critical network of applied economic researchers in Sub-Saharan Africa, supported with the help of IFPRI.	
• AgMIP	van der Mensbrugghe
Dominique van der Mensbrugghe is part of the coordinating team of the Global Economics group of the AgMIP network. Work on phase-2 of the AgMIP project is well under way with two forthcoming publications and a few more projected for the end of 2018.	
• World Trade Organization (WTO)	Corong, Aguiar, van der Mensbrugghe
The Center collaborated with the Economics and Statistics Department of the WTO to develop the WTO Global Trade model. The WTO model, which is based on a recursive dynamic variant of the GTAP model, incorporates a number of extensions especially-suited for crafting dynamic baselines, building long-term global trade projections and conducting dynamic trade policy simulations. Three of the Center's staff (Aguiar, Corong and van der Mensbrugghe) delivered a 5-day WTO model course to WTO officials in Geneva from 5-9 March 2018.	
• Improving services data and modeling	Hertel, van der Mensbrugghe, McDougall
Reviewed data sources for travelers' expenditures.	
• Other potential partnerships/collaborations	Hertel, van der Mensbrugghe
The Center continues to have success in raising funds for our energy-land-water research agenda. This involves spatially explicit, gridded modeling with funding from USDA, DOE and Purdue University's Discovery Park. We will be putting in a number of large proposals during the coming months aimed at funding graduate students and staff working in this area	

7. **Communication Goal:** To facilitate communication amongst members of the network as well as between

the Center and key stakeholders

Tasks	Responsibility
User Support	
Primary Priorities	
• GTAP-L, gtapsupport, contactgtap: Continue offering support	Batta, Chepeliev
Support has been given as usual, through gtapsupport, contactgtap and GTAP-L. Maksym Chepeliev answers inquiries sent to the gtapsupport address and Ginger Batta handles those sent to the contactgtap address.	
Strategic Communication	
Primary Priorities	
• GTAP Social Media	Keeney, Batta
Ginger Batta monitors GTAP on Google Alerts to ensure we are abreast of any news stories, publications, presentations, etc., that reference GTAP so these can be linked from the GTAP website and promoted on social media. The Center has made a concerted effort to increase GTAP's profile on social media, centered mostly on Twitter and Facebook. Guidelines and processes for Center faculty and staff to post have been established and communicated.	
• Publish next issue of the *Journal of Global Economic Analysis*	Hertel, Winchester
The Center continues to publish the JGEA in June and December of each year. After successfully completing its first two years, the journal is now included in the Emerging Sources Citation Index of the Web of Science – a key step towards having its citations being tracked in the Web of Science. The journal is currently ranked #69 out of more than 2,000 journals listed in the IDEAS/REPEC simple impact factors ranking: https://ideas.repec.org/top/top.journals.simple.html	
• Initiate implementation of a GTAP wiki for data and model	van der Mensbrugghe
This project is still in the conceptualization phase as we prepare to hire a professional programmer/web designer.	

Proposed Activities over the Next Year and Beyond

The goals and objectives are discussed in detail below. Here we include a summary of the proposed objectives for the coming year.

1. **Data goal:** To improve the quality of data products

Tasks	Responsibility
Improving the quality of contributed I-O data (core)	**Aguiar**
Primary Priorities	
• Work with contributors to improve I-O tables (US, others)	Aguiar
• Compare IOT with data base to work with contributor on where the largest adjustments occur	Aguiar
Secondary Priorities	
• Finalize the implementation of the dwellings module	McDougall
Addition/Improvement of Datasets used in GTAP Data Base (core)	**Aguiar**
Primary Priorities	

• Agricultural Production Targeting (APT) integration into FIT and other industry targeting	McDougall
• Program data separation	Corong
• Improved Agricultural Production data (FAO)	Chepeliev
• Review of labor and land disaggregation from value added	
• Energy Subsidies: special version for GTAP 9 and 10	Chepeliev
• Development of the GTAP non-GHG emissions Data Base	Chepeliev
Secondary Priorities	
• Examine possibility of targeting trade balances	McDougall
• Examine the availability of NSO data (production, etc., by year) to update I-O tables as part of FIT process	Aguiar
• Examine integration of biofuels into standard data base (in addition separation of heat and power)	Chepeliev, McDougall, Taheripour
• Domestic support, PSE database for Latin America and Africa – MAFAP	van Tongeren, Balié, Boulanger
• Development of the substitution elasticities data base	Chepeliev
Addition/Improvement of Satellite Data (core)	**Aguiar**
Primary Priorities	
• Domestic Margins: special version for GTAP 10	Corong
• Multi-region Input Output Database (GTAP-MRIO)	van der Mensbrugghe
• Energy database (GTAP-E)	Aguiar
• GDYN database	Golub
• GMIG database	Corong
• Land use database	Baldos
• Power and non-CO2 emissions database	Chepeliev

2. Research Goal: To actively participate in quantitative economic analysis of pressing global issues

Tasks	Responsibility
Trade and Development	
Primary Priorities	
• Continue to publish papers on trade, poverty, migration/labor and global supply chains	Staff and Graduate Students
Global Energy and Environmental Issues	
Primary Priorities	
• Continue to publish papers on energy and environmental issues with a special focus on the land-water-energy-climate nexus	Staff and Graduate Students

3. Model Goal: To promote further development of GTAP-based models

Tasks	Responsibility
Primary Priorities	

• Continue to convert some of the Center's model extensions to the new facelifted version of the standard GTAP Model. The priority is GTAP-E and a new dynamic version of GTAP.	Staff and Graduate Students

4. Education Goal: To expand and improve global economic analysis education worldwide

Tasks	Responsibility
Education Plan	**Various**
Primary Priorities	
• 2018 GTAP Short Course	Keeney, Batta, Douglas
• GTAP 101 Courses	Countryman, Batta, Douglas
• GTAP PTA Course	Walmsley, Batta, Douglas
• 2019 Dynamic Short Course	Aguiar, Batta, Douglas
• GTAP HET Course	Akgul, Batta, Douglas
Secondary Priorities	
• Continue investigating additional special topic online mini-courses	Burfisher, van der Mensbrugghe, Hertel
• Continue development and implementation of an "Alumni Outreach/Continued Learning Initiative" for short course graduates	Keeney

5. Staffing Goal: To actively seek and encourage talented staff and graduate students

Tasks	Responsibility
Primary Priorities	
• Hire a programmer/web designer to re-design the GTAP website and provide an architecture for a documentation wiki.	van der Mensbrugghe, Douglas

6. Collaboration Goal: Actively seek opportunities for fostering collaboration with institutions around the world.

Tasks	Responsibility
GTAP Conferences and Board Meetings	**Batta, van der Mensbrugghe**
Primary Priorities	
• 2018 Board Meeting and Conference (Cartagena, Colombia)	Batta, van der Mensbrugghe
• 2019 Board Meeting and Conference (Warsaw, Poland)	Batta, van der Mensbrugghe
• 2020 and 2021 Conference Proposals	Batta, van der Mensbrugghe

7. Communication Goal: To facilitate communication amongst members of the network as well as between

the Center and key stakeholders**.**

Tasks	Responsibility
User Support	
Primary Priorities	
• GTAP-L, gtapsupport, contactgtap: continue offering support	Batta, Chepeliev
• Website redesign/redevelopment	van der Mensbrugghe, Douglas
Strategic Communication	
Primary Priorities	
• GTAP Social Media – continue to increase presence	Keeney, Batta
• Publish third volume of the *Journal of Global Economic Analysis*	Hertel, Winchester

The GTAP Data Base and Other Data Projects: Progress and Future Objectives

As we finalize the version 10 cycle, we mark a representation of 142 regions and 65 sectors over four reference years. As we increase the number of years in the GTAP Data Base, it is important that we improve the cost structure associated with each reference year by allocating I-O tables that have reference year near if not the same as that of the GTAP Data Base.

The following is a list of other issues addressed in version 10 cycle:

1. **Commodity tax fixes** - One of the important fixes required in the GTAP Data Base is for the defect in our international data-targeting module, wherein many of the commodity tax rates from the I-O tables have been zeroed out. This requires some significant changes in our 'FIT' module, which is designed to target numbers from international sources for trade, tariff and energy datasets.
   ***Status**: Completed from 9.2 onwards.*

2. **Tariff Data** - It is highly desirable to have as much consistency as possible for the sources and methodologies used for data for all the reference years. For GTAP 10 we are using consistent tariff data for the three more recent years (2014, 2007, and 2011) at the HS level.
   ***Status**: Part of 10 pre 1 updates.*

3. **Merchandise Trade Data** – As with Tariff data, a consistent database greatly enhances the quality of the time series database we are gradually building and that for both tariff and trade data sets we are now using new classification and concordances. In addition to these, our contributor Mark Gehlhar has improved the methodology constructing reconciled data at the HS level and removing re-exports for 50+ countries with a consistent methodology for 229 countries and all reference years.
   ***Status**: Part of 10 pre 1 updates.*

4. **Energy** - few improvements in the construction of energy volumes, prices, taxes and emissions datasets are part of the version 10 data cycle. One issue that needed special attention had to do with simplifying assumptions that affected countries in Africa. In the construction process, we revise the energy sector to conform better to IEA data, which records data for certain African countries (i.e., Malawi, Mauritius, and Uganda, which are important oil producers) not individually, but as part of "Rest of Africa." In previous versions, we apportioned the IEA information among "Rest of Africa" member countries according to GDP shares. In version 10 we bring in data from other sources (such as UN commodity production statistics) to improve our disaggregation of the IEA energy balance data countries and avoid this problem.
   ***Status**: Part of 10 pre 2 updates.*

5. **Agricultural I-O tables** - We employ a global agricultural Input-Output dataset synthesized by Everett Peterson (Virginia Tech) for disaggregating agricultural sectors in the contributed I-O tables.
   ***Status**: Part of 10 pre 3 updates.*

6. **Agricultural export subsidies** – Jayson Beckman (USDA) used WTO notifications to update 2011 and 2014 data.
   ***Status**: Part of 10 pre 3 updates.*

7. **Services Trade Data** – The new International Monetary Fund's Balance of Payments and International Investment Position Manual (BPM6) made us reconsider the sourcing and processing of services trade data.
   ***Status**: Part of 10 pre 3 updates.*

8. **Set Labeling** – Some of the 3-letter country codes are identical to existing 3-letter sector codes.

While this does not seem to result in any big issues for GAMS or GEMPACK users, it can affect the ordering of countries when some lesser-known GAMS programs are used.
***Status**: Part of 10 pre 3 updates.*

9. **Data and methodological improvements in Income/factor taxes** - There are some methodological defects in the way we process this dataset. These have been rectified tax rates have been updated using the IMF Government Financial Statistics dataset.
***Status**: Part of 10 pre 3 updates.*

The following is a list of other issues to be addressed after version 10 is released to the public:

1. **Satellite data sets –**All satellite datasets based on the GTAP Data Base need updating.
***Status**: Special post-release of version 10*

2. **Energy subsidies from OECD and domestic margins extensions**
***Status**: Special release of version 10*

3. **Agricultural Production Targeting** - Agricultural production targeting was introduced to improve the consistency between the GTAP Data Base and the European I-O tables, as well as the OECD protection expenditures. This agricultural production targeting is currently done prior to the database construction process itself and is susceptible to human error as files are transferred between staff members. Since agricultural production targeting is still desired by board members, we have decided that it should be included in the main build process (i.e. automated) in the future so that such errors can be reduced. In terms of data inputs, we are exploring the use of other sources of data, such as the United Nations Food and Agricultural Organization.
***Status**: Expected to be part of 11 pre 1*

4. **Changes in Construction Programs** - Apart from the changes in methodologies, we also expect to make major changes in the data construction programs. The most important of these is to separate programs and data to avoid possibilities of confusions and mix-ups arising from multiple reference years in the data base, while also making sure that we use exactly the same set of programs for all years.
***Status**: Expected to be part of 11 pre 1*

5. **Value added –**Labor and land treatment during the construction process need to be reviewed and possibly updated.
***Status**: Expected to be part of 11 pre 2*

6. **Dwellings** - In version 8 data cycle, Angel Aguiar had developed a module that deals with dwellings data across the world. For the lack of official data sources, this attempt was not pursued further. We expect to work on this and incorporate it in the GTAP 11 Data Base.
***Status**: Expected to be part of 11 pre 2.*

7. **Domestic Support** - It is desirable to extend the coverage of domestic support to more countries from Africa and Latin America as data becomes available.
***Status**: Expected to be part of 11 pre 3 updates.*

Targeting Production Data
It is our understanding that annual production data exists for a selection of industries. We are considering adjusting the regional data (I-O Tables) to match production by sector for the reference year. This would help update the country data, particularly for those I-O tables that have older reference years. It could also assist us in addressing the African energy issue discussed above.

Trade Balances
We are also considering targeting outside data on trade balances which can presently diverge from 'official' sources due to the bilateral trade reconciliation procedure used in GTAP. This would allow us to better match all the components of GDP, but would require scaling of the balance discrepancies.

Land and biofuels
Further examination of the possibility of informing the standard database with information used currently to expand GTAP into these satellite data.

Schedule for version 11
For version 11, the new reference year could be 2017. Below is the proposed schedule for the GTAP 11 Data Base. The first pre-release would be available to the Board in May 2019 before next year's board meeting; the second pre-release would be available in November 2019. The third and final pre-release would be scheduled for May 2020.

Version 11: Pre-release Schedule (aim for the first week of listed month)

Board Release	Updates	When?
Pre-release 1	Macroeconomic data, Merchandise Trade, Tariff, Agricultural production targeting, Other FIT module fixes	May 2019
Pre-release 2	Energy data and module, Agricultural domestic support, Dwellings, Value added updates	November 2019
Pre-release 3	Export Subsidies, CDE parameters, Services trade data, Domestic Support for new regions	May 2020

Research and Model Development: Progress and Future Objectives

Research Goal: To actively participate in quantitative economic analysis of pressing global concern in the areas of Trade and Development, Energy-Economy Interactions, Land Use and Climate Change

Model Goal: To promote further development of GTAP-based models

Further development of the standard and dynamic GTAP Models continue to be core research activities for Center staff. Related to this theme, the following activities were conducted this year.

Core Funded Projects

Economic Analysis of Climatic and Agricultural Impacts of Nuclear War

- ***Staff Involved:*** Maksym Chepeliev and Dominique van der Mensbrugghe
- ***External Collaborators:*** Gal Hochman, Alan Robock (Rutgers University)
- ***Description:*** A nuclear conflict, even if localized, will have severe impacts on agricultural production with impacts on incomes, production and trade. The productivity shocks from such an event are estimated in a bio-physical modeling framework and then incorporated in the Envisage model to assess the economic impacts.

Externally Funded Projects

Modeling, Parameterization, and Applied Policy Analysis with GTAP Firm Framework

- ***Staff Involved:*** Zeynep Akgul and Thomas Hertel
- ***External Collaborators:*** David Riker (USITC)
- ***Description:*** The USITC project focuses on further development of GTAP-HET model and parameterization.
- ***Status:*** The USITC project started on May 31, 2016 and focuses on further development of GTAP-HET model and parameterization. Two papers related to the project have been published on the USITC Working Paper Series in 2017. The first paper is titled as "One Model to Rule Them All? The Importance of Firm Heterogeneity in CGE Modeling of The Gains From Trade" and it examines the new gains from trade under firm heterogeneity, discusses whether welfare gains under Melitz, Krugman and Armington models are equivalent or not, and summarizes the recent advancements in CGE implementations of firm heterogeneity. The second paper is titled as "Using Power Laws to Identify the Structural Parameters of Trade Models with Firm Heterogeneity" and it focuses on estimating the shape parameter of Pareto distribution and elasticity of substitution across varieties by using firm-level data. Currently, we are working on two more papers. One of them is a documentation of the updates on the GTAP-HET model. The second one is the implementation of the parameter estimation with a policy analysis. As a part of the project, we also provide training sessions in ITC to build capacity on practical uses of GEMPACK to conduct policy analysis with GTAP simulations. The USITC project will be extended for an additional year, until August 30, 2019.

Dynamic-stochastic analysis of land use in the context of long run uncertainties

- ***Staff Involved:*** Alla Golub and Thomas Hertel
- ***External Collaborators:*** Yongyang Cai and Brent Sohngen (Ohio State University)
- ***Description:*** Analysis of long run, socially optimal paths of R&D, forestry management and land use in the context of demographic, climatic and macro-economic uncertainties
- ***Status:*** Funding from NSF

Development of a recursive dynamic trade model

- ***Staff Involved:*** Angel Aguiar, Erwin Corong and Dominique van der Mensbrugghe
- ***External Collaborators:*** Eddy Bekkers and Robert Teh

- ***Description:*** The WTO has requested a dynamic extension to the standard GTAP model with which it hopes to facilitate capacity building in its developing countries members. A number of new dynamic levers have been built into the standard GTAP model, and also trade extensions such as the Krugman and Melitz specifications.
- ***Status:*** Funding from the World Trade Organization (WTO)

Assessing future food security

- ***Staff Involved:*** Maksym Chepeliev and Dominique van der Mensbrugghe
- ***External Collaborators:*** Lorenzo Bellu, Katerina Kavallari and Mark Müller
- ***Description:*** Over the last few years, the FAO has been developing a new partial equilibrium framework to help support its long-established and influential long-term assessments of future food security. The main purpose of this project is to couple the PE framework to a GE framework to develop additional indicators of the long-term prospects for food and agriculture—for example agricultural wages and incomes—and highlight interactions between agriculture and other important sectors of the economy such as energy.
- ***Status:*** Funding from the Food and Agricultural Organization of the United Nations (FAO)

Publications

Akgul, Z., (2017). "One Model to Rule Them All: The Importance of Firm Heterogeneity in CGE Modeling of the Gains from Trade," *USITC Working Paper*, 2017-3-B.

Ahmad, S., Z. Akgul, (2017). "Using power laws to identify the structural parameters of trade models with firm heterogeneity," *USITC Working Paper,* 2017-5-B.

Brookes G., Taheripour F. and Tyner W.E. (2017), The contribution of glyphosate to agriculture and potential impact of restrictions on use at the global level, *GM Crops & Food*, *8*, 4, pp. 216-228.

Cai, Y., Golub, A., and Hertel, T. W. (2017). Agricultural research spending must increase in light of future uncertainties. *Food Policy*. *Policy* (70):71-83. https://doi.org/10.1016/j.foodpol.2017.06.002

Chen, R., Qin, Z., Han, J., Wang, M., Taheripour, F., Tyner, W. O'Connor, D., and Duffield, J. (2018). Life cycle energy and greenhouse gas emission effects of biodiesel in the United States with induced land use change impacts. *Bioresource Technology*, *251*, 249-258.

Chepeliev, M., Diachuk, O., Podolets, R. (2018) Economic assessment of low-emission development scenarios for Ukraine. In: Giannakidis G., Karlsson K., Labriet M., Gallachóir B. (eds) Limiting Global Warming to Well Below 2 °C: Energy System Modelling and Policy Development. Lecture Notes in *Energy*, 64.

Chepeliev, M. and van der Mensbrugghe, D. (2017) Global energy subsidies reform: inclusive approaches to welfare assessment. 20th Annual Conference on Global Economic Analysis. GTAP Resource #5299. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=5299

Diachuk, O., Chepeliev, M., Podolets R., Trypolska, G., Venger, V., Saprukina, T., Yukhymets, R. (2017) Transition of Ukraine to the renewable energy by 2050. Edited by Y. Oharenko and O. Alieva. Heinrich Boell Foundation Regional Office in Ukraine. – Kyiv: Publishing house "Art Book" Ltd. https://ua.boell.org/sites/default/files/transition_of_ukraine_to_the_renewable_energy_by_2050_1.pdf

Golub, A., Hertel, T.W., and Rose, S. (2017). Global land use impacts of US ethanol: revised analysis using dynamic GTAP-BIO framework. Book chapter prepared for inclusion in Handbook of Bioenergy Economics and Policy: Modeling Land use and Greenhouse Gas Emissions Implications, edited by Madhu Khanna and David Zilberman. Springer International Publishing.

Corong, E., Hertel, T, McDougall, R., Tsigas M, van der Mensbrugghe D. (2017). The Standard GTAP Model, Version 7. *Journal of Global Economic Analysis*, 2017, 2(1), 1-119

Hillberry, Russell, & Zhang, Xioahui (2018). Policy and performance in customs: evaluating the trade facilitation agreement. *Review of International Economics, 26*(2), 438-480.

Taheripour F., Zhao X., and Tyner W.E. (2017) "The Impact of Considering Land Intensification and Updated Data on Biofuels Land Use Change and Emissions Estimates," *Biotechnology for Biofuels, 10*: 191.

Taheripour F., Cui H., Tyner W.E. (2017) "An exploration of agricultural land use change at the intensive and extensive margins: Implications for biofuels induced land use change," In Z. Qin, U. Mishra & A. Hastings (Eds.), *Bioenergy and Land Use Change*: American Geophysical Union (Wiley).

Taheripour F., and Tyner W.E. (2017), What would happen if we don't have GMO traits?, in Andrew Schmitz , P. Lynn Kennedy , Troy G. Schmitz (ed.) *World Agricultural Resources and Food Security (Frontiers of Economics and Globalization, Volume 17)* Emerald Publishing Limited, pp.53 – 67.

Taheripour F. and W.E. Tyner (2018) "Substitution in vegetable oil consumption: Implications for estimating biofuels induced land use changes," Purdue University, Department of Agricultural Economics.

Taheripour F. and W.E. Tyner (2018) "Substitution between feed and land in livestock industry: Implications for estimating biofuels induced land use changes," Purdue University, Department of Agricultural Economics.

Walmsley, T., Narayanan, B., Aguiar A., and McDougall, R. (2018) Building a global database: consequences for the national I–O data. *Economic Systems Research*: 1–19. https://doi.org/10.1080/09535314.2018.1440533.

Yao, G., Hertel, T.W., and Taheripour, F. (2018). "Economic drivers of telecoupling and terrestrial carbon fluxes in the global soybean complex. *Global Environmental Change,* Forthcoming.

Presentations

Aguiar, A. (2017). Estimation of home bias database for public procurement analysis. *Presented at the 20th Annual Conference on Global Economic Analysis*, Purdue University, West Lafayette, IN.

Akgul, Z. based on work with C. Carrico and M. Tsigas (2018). Labor composition of fixed business costs, heterogeneous firms, and the U.S. labor market. *Presented Seminar at the United States International Trade Commission (USITC),* Washington D.C.

Akgul, Z., Carrico. C., Tsigas, M.. (2018, January). "Effects of trade on the United States labor market: mobility and market structure." *Presented at the Society of Government Economists Session of the ASSA 2018 Annual Meeting,* Philadelphia, PA.

Akgul, Z., C. Carrico, M. Tsigas. (2017, June). Does the labor composition of fixed business costs matter? Heterogeneous firms and U.S. labor market. *Organized Session Presentation at the 20th Annual Conference on Global Economic Analysis*, West Lafayette IN.

Akgul, Z., C. Carrico, M. Tsigas. (2017, May). Does the labor composition of fixed business costs matter? Heterogeneous firms and U.S. labor market. *Organized Session Presentation at the 2017Society of Government Economists Annual Conference*, Washington D.C.

Beckman J., C. Estrades, M. Flores, and A. Aguiar. (2018, May 17-18) The impacts of export taxes on agricultural trade. *Presented at the NBER Trade and Agricultural Conference*, Cambridge, MA.

Britz, W. and D. van der Mensbrugghe (2017, June). CGEBox: A flexible, modular and extendable framework for CGE analysis in GAMS. Paper presented at the 20th Annual Conference on Global Economic Analysis, GTAP, Purdue University, West Lafayette, IN.

Cai, Y., A. Golub, and T. Hertel. (2017, June) Developing long-run agricultural R&D policy in the face of uncertain economic growth". *Presented at the 20th Annual Conference on Global Economic Analysis*, West Lafayette, IN.

Chepeliev, M., Diachuck, O., Podolets, R. (2017, December). Economic assessment of low-emission development scenarios for Ukraine. *Paper presented at the72nd semi-annual ETSAP meeting*. Zurich, Switzerland.

Chepeliev, M., Pena-Levano, L., Koetse, M. (2017). Capital-labor constant substitution elasticities: a meta-analysis. *Presented at the 2017 AAEA Annual Meeting*. Chicago, IL.

Chepeliev, M. and van der Mensbrugghe, D. (2017, June). Meeting planetary boundaries: economy-wide assessment of global policies towards strong sustainability. (*Presented at the 9th Biennial Conference Ecological Economics: From Theory to Practice)*. St. Paul, MN.

Chepeliev, M. and van der Mensbrugghe, D. (2017, June). Global energy subsidies reform: inclusive approaches to welfare assessment. (*Presented at the 20th Annual Conference on Global Economic Analysis*). West Lafayette, IN.

Chepeliev, M., McDougall, R., and van der Mensbrugghe, D. (2017, June). Consumption energy subsidies incorporation to the GTAP data base. *Presented at the Global Trade Analysis Project, Advisory Board Meeting*, West Lafayette, IN.

Chepeliev, M. and van der Mensbrugghe, D. (2018, March). Global fossil-fuel subsidies and emission externalities: inclusive approaches to welfare assessment. *Presented at the Center for Environmental and Resource Economics (CERE) Seminar*. Umea, Sweden.

Golub, A. (2017, April). Global climate policy impacts on livestock, livelihoods, food security and poverty. Based on collaboration with Benjamin Henderson, Thomas Hertel and others. *Presented at Friedman School of Nutrition Science and Policy*, Tufts University, Medford, MA.

Golub, A. (2018, January). GDyn: dynamic GTAP model. *Presentation contributed to the CGE Baseline workshop organized by the GTAP Center and OECD*.

Roson, R. and D. van der Mensbrugghe (2017, June). Assessing Long Run Structural Change in Multi-Sector General Equilibrium Models. Paper presented at the 20th Annual Conference on Global Economic Analysis, GTAP, Purdue University, West Lafayette, IN.

Sohngen, B., Golub, A., Cai, Y., Hertel. T.W., & Kim, J. (2017, June). Optimal timber management decisions in the face of future uncertainties. *Presented at the 20th Conference on Global Economic Analysis,* West Lafayette, IN.

Taheripour F., Scott D., Hurts C.A., Tyner W.E. (2018, July). Technological progress in US crop production: productivity gains, abundant supply of crop calories, evolution in the livestock industry and implications

for biofuel production," *Will be presented at: the 30th International Conference of Agricultural Economics.* Vancouver, Canada.

Taheripour F., Zhao X., W.E. Tyner (2018, June). Modeling land use in large scale global computable general equilibrium models: preserving physical area of land, *Will be presented at the 21st Annual Conference on Global Economic Analysis.* Cartagena, Colombia.

van der Mensbrugghe, D. (2018, Feb). The Global Trade Analysis Project (GTAP): Data, Models and Research. *Presented at Regional Seminar on Compilation and Application of Supply-Use Tables (SUTs) in Africa,* United Nations Economic Commission for Africa (UNECA), Addis Ababa, Ethiopia.

van der Mensbrugghe, D. (2018, Feb). Assessing the economic consequences of climate change using a Computable General Equilibrium (CGE) Model. *Presented at Macroeconomics of Climate Change—Policies, Outcomes, Models,* World Bank Group, Washington, DC.

van der Mensbrugghe, D. (2018, May). The Belt and Road Initiative: Macro and Sectoral Impacts. *Presented at Economics of the Belt and Road Initiative: An Authors' Workshop,* World Bank Group, Washington, DC.

Yao, G., Hertel, T.W., and Taheripour, F. (2018, August). How the US lost its lead in global soybean trade. *Will be presented at the 2018 Agricultural & Applied Economics Association Annual Meeting, August 5 – August 7, 2018. Washington D.C.*

Yao, G., and Hillberry, R.H. (2018, August). "Structural gravity model estimates of nested constant elasticity of substitution import demands for soybeans. *Will be presented at the 2018 Agricultural & Applied Economics Association Annual Meeting.* Washington D.C.

Zhao X., Taheripour F., Tyner W.E. (2018, July). A comparison between GTAP-BIO and GLOBIOM for estimating biofuels induced land use change emissions. *Will be presented at the 30th International Conference of Agricultural Economics.* Vancouver, Canada.

Zhao X., Tyner W.E., van der Mensbrugghe D. (2017, June). Modeling land physically in CGE models: new insights on intensive and extensive margins. Paper presented at the 20th Annual Conference on Global Economic Analysis, GTAP, Purdue University, West Lafayette, IN.

Education and Network

Additions to the GTAP Paper Series

- **Development of GTAP version 9 Land Use and Land Cover database for years 2004, 2007 and 2011**
  by Baldos, Uris Lantz
  GTAP Research Memorandum No. 30

Journal of Global Economic Analysis
In 2017, the *Journal of Global Economic Analysis* released the following issues and were included in the Web of Science Emerging Sources Citation Index. This mark of quality will improve the visibility of the journal, and articles published in the JGEA will now be included in analyses conducted on Web of Science data. This milestone also means that the JGEA is under consideration for inclusion in the flagship Social Sciences Citation Index.

***Journal of Global Economic Analysis*, Vol 2, No 1 (2017)**

Advances in Methods and Theory

- **The Standard GTAP Model, Version 7**
  Erwin L Corong, Thomas W Hertel, Robert McDougall, Marinos E Tsigas, Dominique van der Mensbrugghe

- **A Proximity-Based Approach to Labor Mobility in CGE Models with an Application to Sub-Saharan Africa**
  Hans Lofgren, Martin Cicowiez

Advances in Software

- **The Calibration and Performance of a Non-homothetic CDE Demand System for CGE Models**
  Y-H Henry Chen

Advances in Pedagogy

- **Current Account Balances, Exchange Rates, and Fundamental Properties of Walrasian CGE World Models: A Pedagogical Exposition**
  André Lemelin

***Journal of Global Economic Analysis*, Vol 2, No 2 (2017)**

Perspectives on Global Economic Analysis

- **Back to the Future: A 25-year Retrospective on GTAP and the Shaping of a New Agenda**
  Frank van Tongeren, Robert Koopman, Stephen Karingi, John M. Reilly, Joseph Francois

Advances in Methods and Theory

- **An Enhanced Analytical Framework for Evaluating the Effects of Trade Costs along Global Value Chains**
  Caitlyn Carrico

Advances in Data and Parameters

- **Aggregation of Gridded Emulated Rainfed Crop Yield Projections at the National or Regional Level**
  Elodie Blanc

Advances in Software

- **R Meets GEMPACK for a Monte Carlo Walk**
  Nelson B. Villoria

Courses

The Center continues to examine ways in which it educates network members. The standard and dynamic short course content both had significant updates to reflect changes to both models. The GTAP 101 and PTA Courses continue to see consistent demand. Mary Burfisher, the developer of the GTAP 101 and PTA Courses "retired" from teaching for the Center in 2017. For the 2018 courses, Amanda Countryman will take over as lead instructor for GTAP 101 and Terrie Walmsley will lead GTAP PTA.

2018 Course Offerings

- GTAP 101 – April 23-June 10 and September 24-November 11
- GTAP Short Course – July 28-August 2
- GTAP PTA – August 20-September 23

Conferences

Proposals for the conferences below (when available) can be accessed at:
https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2018/supp_material.asp

Conference Travel Funding Opportunities

- **Ken Pearson Travel Funds -** In 2018, the Centre of Policy Studies, Victoria University, graciously endowed travel funds for one participant, in the name of the late Ken Pearson, in recognition of his many contributions to the GTAP Network.

- **Alex Meeraus / Thomas Rutherford Travel Funds -** In 2018, the GAMS Development Corporation awarded two participants with travel funding, in honor of Alex Meeraus and Thomas Rutherford.

The purpose of both funding opportunities is to provide a program to support the participation of promising young researchers at the annual GTAP conference and encourage their contribution to the use and further development of analytical software for CGE modelling.

Eligible candidates are early career researchers, within five years of the start of their career, and active in undertaking applied model-based analyses of real world problems using either GEMPACK or GAMS. It is also required that candidates have a paper accepted into the conference.

For the 2018 Conference, 69 individuals applied for consideration, and after deliberation by the funding committees, comprised each of a CoPS/GAMS and GTAP designee, as well as a member of the conference program committee, the following recipients were named.

Ken Pearson Funds
Debora Freire Cardoso
Teaching, Professor
Federal University of Minas Gerais
Brazil

Alex Meeraus / Thomas Rutherford Funds
Yue (Bonnie) Wang
Post-doctoral Fellow
The University of Hong Kong
Hong Kong

Rayan Wolf
Phd Student
Federal University of Viçosa
Brazil

2018 Conference (Cartagena, Colombia)

Andres Escobar from the Economics and Social Research Department, Faculty of Economic Sciences, Universidad de Cartagena will present an update on preparations for the 2018 conference at the board meeting.

2019 Conference (Warsaw, Poland)
The Faculty of Economic Science, University of Warsaw will host the 2019/22nd Annual GTAP Conference in Warsaw, Poland and will present an update to the board on this conference.

2020 Conference (Proposed: Tokyo, Japan)
The National Graduate Institute for Policy Studies prepared and submitted a proposal for the 2020 conference to be held in Tokyo. This proposal was circulated to the board in November 2017 for comments. Further information on this proposal will be presented at the board meeting followed by a formal vote.

2021+ Conferences
The Center for Global Trade Analysis is already in communication with a university in the United States that is interested in hosting the 2021 Conference. If anyone has interest in hosting a future conference, or knows of a potential partnership, please contact Dominique van der Mensbrugghe or Ginger Batta.

Research Fellows
In March 2018, a call was issued for research fellow nominations. The criteria for nomination remained unchanged from previous years. At the Advisory Board Meeting, Stephen Karingi, GTAP Research Fellows Committee Chair, will report on the committee's recommendations for recipients and invite a vote from the board. The GTAP Research Fellow Committee includes Karingi (Chair), Tom Hertel and Kenichi Kawasaki.

GTAP Network, Website and Usage Reports
Reports on the GTAP Network, website and usage may be found at:
https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2018/supp_material.asp

Center Finances and Staffing

Finances
To be discussed at the meeting.

Staffing
Staffing Goal: To actively seek and encourage talented staff and graduate students

Allocation of Resources over the Next Year
An overview of how individuals are funded and all the activities they will spend their time over the next 12 months is detailed below. As you see, many of the Center's staff are externally funded (not supported by consortium funds or data base sales).

Staff Member	Status	Allocation						
Angel Aguiar	100% core	Work with I-O contributors	Documentation	I-O Educational Materials	Data Base (macro data, dwellings, I-O disaggregation, protection, trade)	Oversee release schedule	Research	Short Courses
Zeynep Akgul	100% projects	Further development of GTAP-HET	Estimation/calibration of key parameters in firm het model	Research projects				
Uris Baldos	100% projects	GTAP-AEZ model and database maintenance	SIMPLE model,web app and database development	Research on Food-Land-Water Nexus				
Ginger Batta	100% core	Program Mgmt (proposals, finances, logistics, participant relations, execution)	Product Management (sales, distribution, licensing, reporting)	General Network and Social Media Communication	Promotional Materials	General Center administrative duties		
Sue Bennett	100% core	Assist with grants	Consortium memberships and invoicing	Center finance tracking and reporting	General Center administrative duties			
Maksym Chepeliev	100% core	Integration of energy subsidies to GTAP Data Base	Support of GTAP Model and Data Base users	Data Base (APT) and satellite data (SSPs, Non-CO2 update, substitution elasticities database)	Documentation	Research	Short Course	
Erwin Corong	100% core (except where funded by projects)	Integration of domestic trade, transport, wholesale and retail margins into database/model	Data Base (running data construction programs for standard and updating GMig2)	Streamlining GTAP DB construction (program and data separation); updating documentation	"Guidelines for contributing IO / Supply-USE Tables"	Short Courses	Model Development (GTAP-E 'facelift', GTAP with domestic margins, WTO Global Trade Model)	Research
Jeremy Douglas	100% core	Website						
Alla Golub	100% projects	Dynamic Model GTAP-E Model PE land use model in GAMS	Energy and Environ research	Satellite data (GDyn-E data base documentation)	Grad student supervision	Document GTAP-E and GDyn-E models	Short Courses	
Thomas Hertel	25% core except where funded by projects	Assist with Conference; serve on the Research Fellows Nominating Committee	Research	Grad Student Supervision	Assist/guide development of land use data and models for GTAP	Support development of pedagogical materials for GTAP-HET, the Melitz version of GTAP	Editing the *Journal of Global Economic Analysis*	Assist in Recruitment of Board Members
Jing Liu	100% projects	SIMPLE-G-US	Research on food-land-water nexus and sustainable agriculture	Big-Idea project science coordinator				
Robert McDougall	100% core	Data Base Issues (Taxes, Energy and Agricultural I-O)	Mentoring of data team	Documentation	Changeover from Opus to GNU Make.	Research	Short Courses	
Dominique van der Mensbrugghe	50% core	Managing the Center and relations with the Advisory Board	Model development	Research	Scenario development	Grad student supervision	Short Courses	
Cicero Zanetti De Lima	100% projects	Grid data and GTAP integration	Research on land-use and land-use changes	GTAP-InVEST model integration focus on BES impacts				