CONTACT INFORMATION

1.202.564.1045
parthum.bryan@epa.gov
bryanparthum.com
Citizenship: USA

Mail Code 1809T
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

CURRENT POSITIONS

U.S. Environmental Protection Agency, Office of Policy — 2020 - *present*
National Center for Environmental Economics, Washington D.C.

Salisbury University — 2021 - *present*
Adjunct Professor - Fulton School of Liberal Arts, Salisbury, MD

EDUCATION

Ph.D., Agricultural and Applied Economics — 2020
University of Illinois at Urbana-Champaign, IL
Department: Agricultural and Consumer Economics
Dissertation: *Estimating Demand for Environmental Goods and Services, Now and Later*
Advisor: Prof. Amy W. Ando
Committee: Klaus Moeltner, Ben Gramig, and Peter Christensen

M.S., Policy Economics — 2015
University of Illinois at Urbana-Champaign, IL
Department: Economics
Thesis: *Divesting from the Golden State: A Case Study of Local Foods Systems Using Propensity Score Matching Within Panel Data*
Advisor: Prof. Geoffrey J.D. Hewings

B.S., Economics — 2013
Colorado State University, Fort Collins, CO
Department: Economics
Thesis: *Co-integration of Industry to Estimate Business Cycles, Developing Employment and Revenue Projections for the State of Colorado*
Advisors: Prof. Stephan Weiler and Prof. Harvey Cutler

RESEARCH FIELDS

Primary
- Environmental and Resource Economics
- Applied Econometrics

Secondary
- Environmental Policy
- Climate Change

REFEREED JOURNAL PUBLICATIONS

1. *Overlooked Benefits of Nutrient Reductions in the Mississippi River Basin* with Amy W. Ando. 2020. Land Economics. 96:589-607; doi:10.3368/wple.96.4.589.
2. *Willingness-to-Volunteer and Stability of Preferences between Cities: Estimating the Benefits of Stormwater Management* with Amy W. Ando, Catalina Cadavid, and Noelwah R. Netusil. 2020. Journal of Environmental Economics and Management. 99. doi:10.1016/j.jeem.2019.102274.
3. *Benefits of the Fire Mitigation Ecosystem Service in The Great Dismal Swamp National Wildlife Refuge, Virginia, USA* with Emily Pindilli and Dianna Hogan. 2017. Journal of Environmental Management. 203: 375-82. doi:10.1016/j.jenvman.2017.08.018.

Papers in Preparation

1. *Recreation Elasticities of Mountain Snowpack and Implications for a Changing Climate* with Peter Christensen
2. *A Recreational Demand Model for Mountain Snowpack* with Peter Christensen.
3. *Internalizing the Externality: An Integrated Assessment Model of Reductions in Nutrient Transmission to Gulf of Mexico*
   with Amy W. Ando
4. *Buying the Farm and the Distribution of Local and Cultural Benefits from Farmland Conservation* with Amy W. Ando and Frederick Nyanzu
5. *The Value of Information and Warnings about Harmful Algal Blooms* with Klaus Moeltner and Zhenyu Yao
6. *Using Discrete Choice Experiments as a Tool for Teaching Consumer Theory: A Case Study in an Intermediate Microeconomics Course*

Government Committees

GAO: Federal Efforts to Address Harmful Algal Blooms and Hypoxia - August 2020

Research Assistantships

Big Data in Environmental Economics and Policy
May 2017 - May 2020
Bridge economics with computer science to leverage advances in continuous data acquisition, high performance computing, and machine learning.
University of Illinois Urbana-Champaign, IL
Supervisor: Prof. Peter Christensen

Cultural Divide in WTP: Rural-Urban Preferences
Jan 2016 - May 2020
An Integrated Assessment Framework for Willingness to Pay for Water Quality
University of Illinois Urbana-Champaign, IL
Supervisor: Prof. Amy W. Ando

Land Conservation on the Rural-Urban Fringe
June 2019 - May 2020
Estimating the Distributional Impacts of Land Conservation
University of Illinois Urbana-Champaign, IL
Supervisor: Prof. Amy W. Ando

Dissecting the Energy Efficiency Gap in Home Weatherization
Jan 2016 - Dec 2018
Randomized Control Trial, Quasi-experimental, and Machine Learning
University of Illinois Urbana-Champaign, IL
Supervisor: Prof. Erica Myers

Teaching Experience

Lead Instructor

Environmental Economics (ENVS 210-702)
Online: 40 students SP21
Salisbury University, MD
Undergraduate Credit: 3 Hours

Intermediate Microeconomics (ACE 398)
Lecture: 65 students FA19
University of Illinois at Urbana-Champaign, IL
Undergraduate Credit: 3 Hours
Number of TA's: 1
Teaching Evaluation Scores: 4.9/5

Microcomputer Applications (ACE 161)
Lecture: 50 students SP18
Online: 100 students SU18, FA18
University of Illinois at Urbana-Champaign, IL
Undergraduate Credit: 3 Hours
Number of TA's: 1
Teaching Evaluation Scores: 4.8/5

Teaching Assistant

Intermediate Microeconomics (ACE 398)
Lecture: 40 students SP19
University of Illinois at Urbana-Champaign, IL
Undergraduate Credit: 3 Hours.
Teaching Evaluation Scores: 5/5

Teaching Certificates and Awards

List of Teachers Ranked as Excellent
SP18*, SU18, FA18, SP19*, FA19
Top-rated faculty and instructors, asterisk indicates top 10%

ACES Teaching and Learning Academy Course FA17
University of Illinois at Urbana-Champaign, IL
Eight-week collaborative faculty development program

Teacher Scholar Certificate FA19
University of Illinois at Urbana-Champaign, IL
Exploration of pedagogy from a discipline-based perspective

Graduate Teacher Certificate FA19
University of Illinois at Urbana-Champaign, IL
Documented teaching experience, development, and reflective practice

Awards

Louis V. Logeman Graduate Student Teaching Award
College of Ag., Consumer and Environmental Sciences, April 2020

Most Outstanding Second Year Research Paper
Department of Agriculture and Consumer Economics, Nov 2018

Outstanding Ph.D. Student
Department of Agriculture and Consumer Economics, May 2018

Gamma Sigma Delta
Honor Society of Agriculture, Jan 2017

Invited Presentations

U.S. Socioeconomic Impacts of Harmful Algal Blooms Workshop
- Woods Hole Oceanographic Institution, 2020
  Washington, D.C. (virtual)

Using Web-sourced Data to Estimate the Demand for Climate Amenities
- Camp Resources, 2019
  Asheville, NC (invited presentation of learning tutorial)

Selected Presentations

Preferences for Environmental Quality across the Rural-Urban Divide
- The Social Cost of Water Pollution and IAM Workshop, 2019
  Ithaca, NY (full presentation)
- Annual W4133: Multistate Research Project, 2018
  Austin, TX (full presentation)

You are Here: Bringing New Life, and Methods, to Stated Preference Research
- The Workshop on Environmental Economics and Data Science, 2019
  Portland, OR (short presentation)

The Price of Powder: Evidence on the Demand for Snow from Property Rentals

- Annual W4133: Multistate Research Project, 2019
  Santa Fe, NM (full presentation)

Big Mountain Losses for Small Mountain Towns and the Ski Industry

- Program in Environmental and Resource Economics, 2018
  Urbana, IL (full presentation)

Health Benefits of the Fire Mitigation Ecosystem Service

- BioEcon 19th Annual, 2017
  Tilburg, Netherlands (full presentation)

Service and Leadership

Referee

Journal of Environmental Economics and Management (3), American Journal of Agricultural Economics (4), Environmental and Resource Economics (1), Regional Science and Urban Economics (1), Landscape and Urban Planning (2), Land Use Policy (1), Ecological Economics (2)

Department and Campus

Student Sustainability Committee — *Vice Chair* 2018 -2019
Land and Water Subcommittee — *Chair* 2017 - 2018
UIUC Campus Senate — *Senator* 2016 - 2018
Senate Executive Committee 2017 - 2018
Committee on Campus Operations 2016 - 2017
Program in Environmental Economics — *Coordinator* 2017 - 2018
Graduate Student Organization of ACE — *Vice President* 2016 - 2017
Graduate Academy for College Teaching — *Instructor* 2019 - 2020
Teaching Teachers how to Teach

Community Outreach

ACES Family Academies — *Short Course* July 2019
Economics: The Fun and Seldom Seen Kind

Additional Experience

Economist

Department of the Interior, U.S. Geological Survey 2015 - 2020
Reston, VA
Series: GS-0199-09
Supervisor: Emily Pindilli, 1.703.648.5732
Inform adaptive management decisions within the U.S. interior and abroad through interdisciplinary and inter-agency collaboration. Contribute to policy discussion and design.

Project Coordinator

The Global 2100 Project — Our Task, Inc. 2015 - 2017
Washington, DC
Organize research and writing efforts across 25 researchers to develop a comprehensive analysis of global projections for climate, environment, population, agriculture, health, energy, education, conflict, and economic systems through the year 2100.

Owner and Founder

Parthum Construction 2005 - 2014
Laporte, CO
Design and build custom homes and high-end residential remodels, manage large budgets ($50k-$1mil), supervise up to 6 employees and contractors.

References

Amy W. Ando, Ph.D.
Professor, Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign, IL

amyando@illinois.edu

Klaus Moeltner, Ph.D.
Professor, Department of Agricultural and Applied Economics
Virginia Tech, VA
moeltner@vt.edu

Peter Christensen, Ph.D.
Assistant Professor
Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign, IL
pchrist@illinois.edu

John A. (Sean) Fox, Ph.D.
Professor and Department Head
Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign, IL
seanfox@illinois.edu

PROGRAMMING
- STATA, R, MATLAB, python, ArcPy, ArcGIS, LaTeX, Office

LANGUAGES
- English (native), American Sign Language (fluent)

Dissertation Abstracts

Recreation Elasticities of Mountain Snowpack and Implications for a Changing Climate

with Peter Christensen

Dissertation Chapter I

Many mountain towns rely on climate amenities such as wintertime precipitation to generate local economic activity. However, climate models predict large reductions in annual snowfall that could greatly reduce the recreational value of these markets. Harnessing a unique panel of daily transactions from the short-term property rental market, we combine daily weather, daily mountain snowpack, and daily resort snowfall to estimate the causal effect of changes in mountain snowpack on visitation in 219 resort markets across the United States. We make three primary contributions to the study of climate change: 1) we develop a new method to estimate elasticities for climate amenities by matching the spatial and temporal variation in the level of the amenity with the frequency of related market transactions; 2) we derive state-specific snowpack elasticities for all major markets across the United States and find significant heterogeneity in the behavioral response across states; and 3) we estimate year-to-year variation in the recreation revenue from snowpack under current and future climate scenarios. We predict that resort markets could face reductions in local snow-related revenue of -40% to -80%, almost twice as large as previous estimates suggest. This translates to a lower-bound on the annual willingness to pay to avoid reductions in snowpack between $1.4 billion (RCP4.5) and $2.36 billion (RCP8.5) by the end of the century.

A Recreational Demand Model for Snowpack

Dissertation Chapter II

I estimate demand parameters for wintertime recreation in the contiguous United States. I make two primary contributions in this paper: 1) I provide estimates of the MWTP for mountain snowpack at the national and regional levels; and 2) I construct a matrix of substitution elasticities between US resort markets. Both contributions invoke random utility to estimate structural parameters in the utility functions of alpine skiers. For the first contribution (1), I maintain trip-level micro data to estimate marginal utilities subsequent MWTP. I develop a new instrument to address price endogeneity concerns for use in a 2SLS instrumental variables approach. For the second contribution (2), I aggregate the trip-level data to market-level and calculate daily market shares. This allows me to recover substitution patterns in the form of elasticities, providing insight into how skiers move across markets based on changes in mountain snowpack. Both contributions are important for understanding consumer welfare in the alpine skiing market and the implications of a changing climate.

Overlooked Benefits of Nutrient Reductions in the Mississippi River Basin

with Amy W. Ando

Dissertation Chapter III

Improvements in local surface water quality in the Mississippi River Basin (MRB) can contribute to the regional environmental goals of reducing hypoxia in the Gulf of Mexico. To inform estimates of the benefits of water quality policy, we use a choice experiment survey in a typical sub-watershed of the MRB to estimate willingness to pay for local environmental improvements and helping to reduce hypoxia far downstream. We find that residents place large values on reduced local algal blooms, improved local fish populations and diversity, and meeting local commitments to help with the regional environmental problem.