

# Kevin Robert Gurney

School of Informatics, Computing, and Cyber Systems | Northern Arizona University  
1295 S. Knoles Dr., Building 90, room 320 | Flagstaff, AZ 86011  
e-mail: [kevin.gurney@nau.edu](mailto:kevin.gurney@nau.edu)

## EDUCATION

Ph.D. 2004 – Ecology, Colorado State University  
M.P.P. 1996 – Public Policy, University of California, Berkeley  
S.M. 1990 – Meteorology, Massachusetts Institute of Technology  
B.A. 1986 – Environmental Physics, University of California, Berkeley

## PROFESSIONAL EXPERIENCE

Professor, School of Informatics, Computing and Cyber Systems, Northern Arizona Univ, Aug 2018-present  
Professor, Honors Faculty, School of Life Sciences, Arizona State University, Aug 2017 – present  
Associate Professor, Honors Faculty, School of Life Sciences, Arizona State University, Aug 2010 – Aug 2017  
Affiliated Faculty, School of Geographical Sciences and Urban Planning, Mar 2013 - present  
Graduate Faculty, School of Sustainability, Arizona State University, Jan 2013 - present  
Senior Sustainability Scientist, Global Institute of Sustainability, Arizona State Univ, Aug 2010 – present  
Associate Professor, Dept of Earth and Atmos Sci & Dept of Agronomy, Purdue University, Aug 2009 – Aug 2010  
Assistant Professor, Dept of Earth and Atmos Sci & Dept of Agronomy, Purdue University, Aug 2005 – Aug 2009  
Associate Director, Purdue Climate Change Research Center, Purdue University, Aug 2005 – Aug 2008  
Research Scientist I, Department of Atmospheric Science, Colorado State University, July 1998 – August 2005  
Staff Research Associate, Bren School of Env. Sci and Mngmnt, Univ of Ca, Santa Barbara, Apr 97 – June 98  
Senior Scientist, Institute for Energy and Environmental Research, September 1992 – January 1997  
Research Associate, Atmospheric and Environmental Research, Inc., February 1992 – September 1992  
Research Associate, Tellus Institute, February 1990 - October 1991  
Research Assistant, National Oceanic and Atmospheric Administration, Summer 1988  
Research Intern, Environmental Sciences Division, Lawrence Livermore National Laboratory, Nov 1986 - Sept 1987  
Student Assistant, Atmospheric Aerosol Research Group, Lawrence Berkeley National Lab, Feb 1985-Oct 1986

## HONORS AND AWARDS

Fulbright U.S. Scholar award, 2019  
IPCC Lead Author, 6<sup>th</sup> Assessment Report  
Nominated for AGU's Macelwane Medal 2014  
Sigma Xi Young Investigator's Award 2010  
NSF CAREER Award 2009  
Named 2007 "Air Conservationist of the Year", from the Indiana Wildlife Federation

## UNIVERSITY SERVICE

Graduate Degree Program in Ecology executive committee 1999-2000  
Graduate Degree Program in Ecology, Front Range Student Ecology Symposium Chairman 1999-2000  
Undergraduate programs committee: 2013 - 2017  
ASU Safety committee: 2010 – 2013, 2017 - 2018  
ASU Diversity Committee, Purdue University, Aug 2005 – Aug 2010

## OTHER NATIONAL OR INTERNATIONAL PROFESSIONAL SERVICE

IPCC contributing author/reviewer 2<sup>nd</sup> through 5<sup>th</sup> Assessments (IPCC was organizational co-recipient of 2007 Nobel Peace Prize)  
Chapter co-lead State of the Carbon Cycle Report 2, June 2016 - present  
Workshop Organizer, NIST Inventory Workshop, National Institute for Standards and Technology, Bethesda, MD, 19-20, September

Expert Witness for state of Minnesota on utilization of the social cost of carbon: 2015  
 North American Carbon Program All-investigators Meeting steering committee member, 2015  
 Integrated Greenhouse Gas Information System (IG3IS) Committee Member, 2016 - present  
 Carbon cycle science steering working group (CCSWG) to the Carbon science interagency working group (CCIWG)  
 Global Carbon Program Science Steering Committee: 2008 - 2013  
 NASA review panel member, Instrument Incubator Program 2001  
 Larimer County Environmental Advisory Board 2000-2002  
 NOAA Review Panel, Global Carbon Cycle Program 2005  
 NOAA Global Carbon Cycle Scientific Steering Committee, 2006 - present  
 NASA Review Panel, New Investigator Program, April 2006  
*Carbon Management*, Editorial Board, 2009 - present  
 MCI Task Force Committee member, 2005 – present  
*Carbon Balance and Management*, Editorial Board member, 2006 - present  
 Carbon Dioxide Information Analysis Center, external advisory committee member, 2007 - present  
 United Nations Framework Convention on Climate Change attendee/advisor since 1996

### PROFESSIONAL SOCIETY

American Geophysical Union member since 1990  
 Sigma Xi member since 2000  
 Phi Kappa Phi lifetime member since 2004  
 Ecological Society of America member since 2004

### PEER-REVIEWED PUBLICATIONS

#### 2020

138. Hajny, K.D., R. Kaeser, T. Jayarathne, J. Tomlin, J. Pitt, P.B. Shepson, B.H. Stirm, C. Floerchinger, C. Gately, M. Sargent, S. Wofsy, K.R. **Gurney**, A. Karion, I. Lopez-Coto, A. Turner (2020) Measurement of Anthropogenic CO<sub>2</sub> Emissions from New York City compared to Inventories, *in preparation*.
137. Mueller, K. T. Lauvaux, K.R. **Gurney**, P. DeCola, S. Gourdji, G. Roest, J. Whetstone (2020) Measurement-based greenhouse gas emission estimates in support of city climate action and sustainability goals, *in preparation*.
136. Mallia, D., L. Mitchell, L. Kunik, B. Fasoli, R. Bares, K.R. **Gurney**, D. Mendoza, J.C. Lin (2020) Constraining urban CO<sub>2</sub> emissions using mobile observations derived from a novel light-rail public transit platform, *in preparation for ES&T*.
135. Addington, O., Z-C. Zeng, T. Pongetti, R-L. Shia, **K.R. Gurney**, J. Liang, G. Roest, Y.L. Yung, S.P. Sander (2020) Estimating Nitrous Oxide (N<sub>2</sub>O) Emissions for the Los Angeles Megacity Using Mountaintop Remote Sensing Observations, *submitted to Remote Sensing of the Environment*.
134. Berelson, W.M., N. Rollins, A.J. West, G. Ban-Weiss, J. Ko, **K.R. Gurney**, and R. Cohen (2020) Atmospheric Radon, CO<sub>2</sub> and Methane Define a Decrease in Los Angeles CO<sub>2</sub> Emissions during COVID-19 Shutdown, *submitted to Science*.
133. Song, Y., **K.R. Gurney** (2020) The relationship between on-road FFCO<sub>2</sub> emissions and socio-economic/urban form factors for global cities: significance, robustness, and implications, *under review at Sustainability*.
132. Roest, G., **K.R. Gurney**, S.M. Miller, and J. Liang (2020) Informing urban climate planning with high resolution data: the Hestia fossil fuel CO<sub>2</sub> emissions for Baltimore, Maryland, *under review at Carbon Balance and Management*.
131. **Gurney**, K.R., J. Liang, G. Roest, Y. Song, K. Mueller, T. Lauvaux (2020) Under-reporting of greenhouse gas emissions in U.S. cities, *under review at Nature Communications*
130. **Gurney**, K.R., Y. Song, J. Liang, G. Roest (2020) Towards accurate, policy-relevant fossil fuel CO<sub>2</sub> emission landscapes, *accepted to Env. Sci. & Tech*.
129. Ruti, P., O. Tarasova, J. Keller, C. Carmichael, O. Hov, S. Jones, D. Terblanche, C. Anderson, A. Barros, P. Bauer, V. Bouchet, G. Brasseur, B. Brunet, P. DeCola, V. Dike, M.D. Kane, C. Gan, **K. Gurney**, S. Hamburg, W. Hazeleger, M. Jean, D. Johnston, A. Lewis, P. Li, X. Liang, V. Lucarini, A. Lynch, E. Manaenkova, J.-C. Nam, S. Ohtake, N. Pinardi, J. Polcher, E. Ritchie, A.E. Sakyia, C. Saulo, A. Singhee, A. Sopaheluwakan, A. Steiner, A. Thorpe, M. Yamji (2020) Advancing Research for Seamless Earth System Prediction, *Bulletin of the American Meteorological Society*, <https://doi.org/10.1175/BAMS-D-17-0302.1>, January 20, 2020.

128. **Gurney, K.R.**, J. Liang, R. Patarasuk, Y. Song, J. Huang, G. Roest (2020) The Vulcan Version 3.0 High-Resolution Fossil Fuel CO<sub>2</sub> Emissions for the United States, *under review at JGR-Atmospheres*.
127. Basu S., S.J. Lehman, J.B. Miller, A.E. Andrews, C. Sweeney, **K.R. Gurney**, X. Xu, J. Southon, P. Tans (2020) Estimating US Fossil Fuel CO<sub>2</sub> Emissions from Measurements of <sup>14</sup>C in Atmospheric CO<sub>2</sub>, *Proceedings of the National Academy of Sciences*, [www.pnas.org/cgi/doi/10.1073/pnas.1919032117](http://www.pnas.org/cgi/doi/10.1073/pnas.1919032117).
126. Schimel, D., B. Moore, P. Sellers et al. (2020) Observing the Carbon-Climate System, *under review at the Bulletin of the American Meteorological Society*.
125. Ahn, D., J. Hansford, S. Howe, X. Ren, R. Salawitch, N. Zeng, M. Cohen, B. Stunder, O. Salmon, P.B. Shepson, **K.R. Gurney**, T. Oda, I. Lopez-Coto, J. Whetstone, R.R. Dickerson (2020) Fluxes of Atmospheric Greenhouse-Gases in Maryland (FLAGG-MD): Emissions of Carbon Dioxide in the Baltimore, MD-Washington, DC area, *J. Geophys. Res.*, <https://doi.org/10.1029/2019JD032004>.
124. Strandgren, J., D. Krutz, J. Wilzewski, C. Paproth, I. Sebastien, **K.R. Gurney**, J. Liang, A. Roiger, A. Butz (2020) Towards space-borne monitoring of localized CO<sub>2</sub> emissions: an instrument concept and first performance assessment, *accepted to Atmospheric Measurement Techniques*.
123. Lauvaux, T., **K.R. Gurney**, N.L. Miles, K.J. David, S.J. Richardson, A. Deng, B.J. Nathan, T. Oda, J.A. Wang, L.R. Hutryra, J.C. Turnbull (2020) Policy-relevant assessment of urban greenhouse gas emissions, *under review at Env. Sci. & Tech*.
122. Park, C., et al. (2020) Numerical simulation of atmospheric CO<sub>2</sub> concentration and flux over the Korean Peninsula using WRF-VPRM model during Korus-AQ 2016 Campaign, *PLoS ONE*, 15(1): e0228106, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0228106>

## 2019

121. Luqman, M., P. Rayer, **K.R. Gurney** (2019) Combining measurements of Built-up area, Nighttime Light and Travel distance for detecting change in Urban Boundaries: Introducing BUNTUS Algorithm, *Remote Sensing*, 11(24), 2969; <https://doi.org/10.3390/rs11242969>.
120. Nathan, B., T. Lauvaux, J. Turnbull, **K.R. Gurney** (2019) Model output for determining sector-based CO<sub>2</sub> emissions in both pseudodata and real-data inversion analyses of Indianapolis for January-April 2015, *datacommons@psu*, doi:10.26208/rbrk-5q41.
119. Feng, S., T. Lauvaux, K.J. Davis, K. Keller, P. Rayner, T. Oda, **K.R. Gurney**, Y. Zhou, C. Williams, A. E. Schuh, J. Liu, I. Baker (2019), Ensemble model output of North American atmospheric CO<sub>2</sub> simulation (full WRF-chem output), Data set. Available online from The Pennsylvania State University Data Commons, University Park, Pennsylvania, USA, doi:10.26208/7a4p-q224.
118. Kunik, L. D.V. Mallia, **K.R. Gurney**, D.L. Mendoza, T. Oda, J.C. Lin (2019) Bayesian inverse estimate of urban CO<sub>2</sub> emissions: results from a synthetic data simulation over Salt Lake City, UT, *Elementa: Science of the Anthropocene*, 7: 36. DOI: <https://doi.org/10.1525/elementa.375>.
117. Wang, Y., P. Ciais, G. Broquet, F-M. Breon, T. Oda, F. Lespinas, Y. Meijer, A. Loescher, G. Janssens-Maenhout, B. Zheng, H. xu, S. Tao, **K.R. Gurney**, G. Roest, D. Santaren, Y. Su (2019) A global map of emission clumps for future monitoring of fossil fuel CO<sub>2</sub> emissions from space, *Earth Syst. Sci. Data*, 11, 1-17.
116. He, L., Z-C Zeng, T. Pongetti, C. Wong, J. Liang, **K. Gurney**, S. Newman, V. Yadav, K. Verhulst, C. Miller, R. Duren, C. Frankenberg, P. Wennberg, R-L. Shia, Y. Yung (2019) Atmospheric methane emissions correlate with natural gas consumption from residential and commercial sectors in Los Angeles, *Geophys. Res. Lett.*, 46, 8563-8571, <https://doi.org/10.1029/2019GL083400>.
115. **Gurney, K.R.**, Liang, J, D.O. O’Keeffe, R. Patarasuk, M. Hutchins, J. Huang, P. Rao, and Y. Song (2019) Comparison of Global Downscaled Versus Bottom-Up Fossil Fuel CO<sub>2</sub> Emissions at the Urban Scale in Four US Urban Areas, *J. Geophys. Res.-Atmos.*, 124, 2823-2840, <https://doi.org/10.1029/2018JD028859>.
114. **Gurney, K.R.**, R. Patarasuk, J. Liang, D. O’Keeffe, P. Rao, Y Song (2019) The Hestia Fossil Fuel CO<sub>2</sub> Emissions Dataset for the Los Angeles Basin, *Earth System Science Data*, 11, 1-27, <https://doi.org/10.5194/essd-11-1-2019>.
113. Feng, S., T. Lauvaux, K. Keller, K.J. Davis, P. Rayner, T. Oda, **K.R. Gurney** (2019) A road map for improving the treatment of uncertainties in high-resolution regional carbon flux inverse estimates, *Geophys. Res. Lett.*, 46. <https://doi.org/10.1029/2019GL082987>.
112. Cui, X., S. Newman, X. Xu, A.E. Andrews, J. Miller, S. Lehman, S. Jeong, J. Zhang, C. Priest, M. Campos-Pineda, **K.R. Gurney**, H.Graven, J. Southon, M.L. Fischer (2019), Atmospheric Observation-based Estimation of Fossil Fuel CO<sub>2</sub> Emissions from Regions of Central and Southern California, *Science of the Total Environment*, 664, 381-391, <https://doi.org/10.1016/j.scitotenv.2019.01.081>.

111. Nangini, C, A. Peregón, P. Ciais, U. Weddige, F. Vogel, J. Wang, F.-M. Breon, S. Bachra, Y. Wang, **K. Gurney**, Y. Yamagata, K. Appleby, S. Telahoun, P.G.. Canadell, A. Grubler, S. Dhakal, F. Creutzig (2019) A global dataset of city CO<sub>2</sub> emissions and ancillary data related to emission for 343 cities, *Scientific Data*, 6, Article number: 180280. <https://doi.org/10.1038/sdata.2018.280>.
110. Martin, C.R., N Zeng, A. Karion, K. Mueller, S. Ghosh, I. Lopez-Coto, **K.R. Gurney**, T. Oda, K. Prasad, Y. Liu, R.R. Dickerson, J. Whetstone (2019), Investigating Sources of Variability and Error in Simulations of Carbon Dioxide in an Urban Region, *Atmos. Env.*, 199, 55-69. <https://doi.org/10.1016/j.atmosenv.2018.11.013>.

## 2018

109. Hedelius, J., J. Liu, T. Oda, S. Maksyutov, C.M. Roehl, L.T. Iraci, J.R. Podolske, P.W. Hillyard, J. Liang, **K.R. Gurney**, D. Wunch, P.O. Wennberg (2018) Southern California Megacity CO<sub>2</sub>, CH<sub>4</sub>, and CO flux estimates using ground and space-based remote sensing and a Lagrangian model, *Atmos. Chem. and Physics*, 18, 16271-16291, <https://doi.org/10.5194/acp-18-16271-2018>
108. Nathan, B.J., T. Lauvaux, J. Turnbull, S.J. Richardson, N.L. Miles, **K.R. Gurney** (2018) Source Sector Attribution of CO<sub>2</sub> Emissions in an Urban Multi-species Bayesian Inversion System, *J.Geophys. Res.* 123(23), 13611-13621. <https://doi.org/10.1029/2018JD029231>
107. Liu, J., K.Bowman, D. Schimel, N. Parazoo, Z. Jiang, M. Lee, A. Bloom, D. Wunch, **K.R. Gurney**, D. Menemenlis, M. Gierach, D. Crisp, A. Eldering (2018) Responses to Comment on “Contrasting carbon cycle responses of the tropical continents to the 2015-2016 El Niño”, *submitted to Science*.
106. Park, C., Park, C. Gerbig, S. Newman, R. Ahmadov; S. Feng, **K.R. Gurney**, G.R. Carmichael, S-Y. Park, H-W. Lee, M. Goulden, J. Stutz, J. Peischl, T. Ryerson (2018) CO<sub>2</sub> transport, variability and budget over the Southern California Air Basin using high resolution WRF-VPRM model during CalNex 2010 Campaign, *Journal of Applied Meteorology and Climatology*, 57 (6), 1337-1352. <https://doi.org/10.1175/JAMC-D-17-0358.1>.
105. Lin, J. L. Mitchell, E. Crosman, D. Mendoza, M. Buchert, R. Bares, B. Fasoli, D. Bowling, D. Pataki, D Catharine, C. Strong, **K.R. Gurney**, R. Patarasuk, M. Baasandorj, A. Jacques, S. Hoch, J. Horel, J. Ehleringer (2018) CO<sub>2</sub> and carbon emissions from cities: linkages to air quality, socioeconomic activity and stakeholders in the Salt Lake City urban area, *Bulletin of the American Meteorological Society*, November 2018, 2325-2339. <https://doi.org/10.1175/BAMS-D-17-0037.1>
104. Salmon, O.E., P.B. Shepson, X. Ren, H. He, R.R. Dickerson, B.H. Stirm, S.S. Brown, D.L. Fibiger, E.E. McDuffie, T.L.Campos, **K.R. Gurney**, J.A. Thornton (2018) Top-down Estimates of NO<sub>x</sub> and CO Emissions from Washington, D.C.-Baltimore During the WINTER Campaign, *Journal of Geophysical Research.*, <https://doi.org/10.1029/2018JD028539>.
103. Graven, H., M.L. Fischer, T. Lueker, S. Jeong, T.P. Guilderson, R.F. Keeling, R. Bambha, K. Brophy, W. Callahan, X. Cui, C. Frankenberg, **K.R. Gurney**, B.W. LaFranchi, S.J. Lehman, H. Michelsen, J.B. Miller, S. Newman, W. Paplawsky, N.C. Parazoo, C. Sloop, S.J. Walker (2018) Assessment of Fossil Fuel CO<sub>2</sub> Emission in California Using Atmospheric Observations and Models, *Environ. Res. Lett.*, 13 065007. <https://doi.org/10.1088/1748-9326/aabd43>.
102. Liu, J, K. Bowman, N. Parazoo, A. Anthony, D. wunch, J. Zhe, **K.R. Gurney**, D. Schimel (2018) Detecting drought impact on terrestrial biosphere carbon fluxes over contiguous US with satellite observations, *Env. Res. Lett.*, 13 (9) 095003. <https://doi.org/10.1088/1748-9326/aad5ef>.
101. Nathan, B., T. Lauvaux, J. Turnbull, **K.R. Gurney** (2018) Investigations Into the Use of Multi-Species Measurements for Source Apportionment of the Indianapolis Fossil Fuel CO<sub>2</sub> Signal, *Elem Sci Anth.* 6(1):21. DOI: <http://doi.org/10.1525/elementa.131>
100. Wu, K., T. Lauvaux, K.J. Davis, A. Deng, I. Lopez Coto, **K.R. Gurney**, R. Patarasuk (2018) Joint inverse estimation of fossil fuel and biogenic CO<sub>2</sub> fluxes in an urban environment: An observing system simulation experiment, *Elem. Sci. Anth.* 6(1):17. DOI: <http://doi.org/10.1525/elementa.138>
99. Mitchell, L., J.C. Lin, D.R. Bowling, D.E. Pataki, C. Strong, A.J. Schauer, R. Bares, S.E. Bush, B.B. Stephens, D. Mendoza, D. Mallia, L. Holland, **K.R. Gurney**, J.R. Ehleringer (2018) Long-term urban carbon dioxide observations reveal spatial and temporal dynamics related to urban characteristics and growth, *Proceedings of the National Academy of Sciences*. March 5, 2018, <https://doi.org/10.1073/pnas.1702393115>

## 2017

98. Bowman, K., J. Liu, A. Bloom, N. Parazoo, M. Lee, Z. Jiang, D. Menemenlis, M. Gierach, G. Collatz, **K.R. Gurney** (2017) Global and Brazilian carbon response to El Nino Modoki 2011-2010, *Earth and Space Science*, 4, 637-660. <https://doi.org/10.1002/2016EA000204>



97. Liu, J., K.Bowman, D. Schimel, N. Parazoo, Z. Jiang, M. Lee, A. Bloom, D. Wunch, **K.R. Gurney**, D. Menemenlis, M. Girerach, D. Crisp, A. Eldering (2017) [Contrasting carbon cycle responses of tropical continents to the 2015-16 El Nino](#), *Science*, **358**, 191.
96. Cambaliza, M.O.L., P.B. Shepson, J. Bogner, D.R. Caulton, B. Stirm, C. Sweeney, S.A. Montzka, K.R. Gurney, K. Spokas, O.E. Salmon, T.N. Lavoie, A. Hendricks, K. Mays, J. Turnbull, B.R. Miller, T. Lauvaux, K. Davis, A. Karion, B. Moser, C. Miller, C. Obermeyer, J. Whetstone, K. Prasad, N. Miles, S. Richarson (2017) Quantification and source apportionment of the methane emission flux from the city of Indianapolis, *Elem. Sci. Anth.*, <https://www.elementascience.org/articles/10.12952/journal.elementa.000037/>
95. Deng, A., T. Lauvaux, K.J. Davis, B.J. Gaudet, N. Miles, S.J. Richardson, K. Wu, D.P. Sarmiento, R.M. Hardesty, T.A. Bonin, W.A. Brewer, **K.R. Gurney** (2017) Toward reduced transport errors in a high resolution urban CO<sub>2</sub> inversion system, *Elem. Sci. Anth.*, <https://www.elementascience.org/articles/10.1525/elementa.133/>
94. Liang, J., **K.R. Gurney**, D. O'Keeffe, M. Hutchins, R. Patarasuk, J. Huang, Y. Song, P. Rao (2017) Optimizing the spatial resolution for urban CO<sub>2</sub> flux studies using the Shannon entropy, *Atmosphere*, **8**(90), <https://doi.org/10.3390/atmos8050090>
93. Oda, T., T. Lauvaux, D. Lu, J. Tang, P. Rao, N.L. Miles, S.J. Richardson, **K.R. Gurney**, K.J. Davis (2017) On the impact of the granularity of space-based urban CO<sub>2</sub> emissions in urban atmospheric inversions: A case study for Indianapolis, IN, *Elem. Sci. Anth.*, <https://www.elementascience.org/articles/10.1525/elementa.146/>
92. Hedalius, J.K., S. Feng, C.M. Roehl, D. Wunch, P.W. Hillyard, J.R. Podolske, L.T. Iraci, R. Patarasuk, P.Rao, D. O'Keeffe, **K.R. Gurney**, R. Lauvaux, P. Wennberg (2017) Emissions and topography effects on column CO<sub>2</sub> (XCO<sub>2</sub>) variation, with a focus on the Southern California Megacity, *JGR-Atmospheres*, <https://doi.org/doi:10.1002/2017JD026455>.
91. Davis, K.J., A. Deng, T. Lauvaux, N.L. Miles, S.J. Richardson, D. Sarmiento, **K.R. Gurney**, R.M. Hardesty, A. Brewer, P.B. Shepson, M.O. Cambaliza, C. Sweeney, J. Turnbull, J. Whetstone, A. Karion (2017) The Indianapolis Flux Experiment (INFLUX): A test-bed for developing anthropogenic greenhouse gas measurements, *Elem Sci Anth*, **5**(21), <https://www.elementascience.org/article/10.1525/elementa.188/>
90. Miles, N., S.J. Richardson, T. Lauvaux, K.J. Davis, A. Deng, J. Turnbull, A. Karion, C. Sweeney, **K.R. Gurney**, R. Patarasuk, I. Razlivanov, M.O. Cambaliza, P.B. Shepson (2017) Quantification of urban atmospheric boundary layer greenhouse gas dry mole fraction enhancements: Results from the Indianapolis Flux Experiment (INFLUX), *Elem Sci Anth*. 2017;5:27. <http://doi.org/10.1525/elementa.127>
89. Heimbürger, A.M.F., P.B. Shepson, B.H. Stirm, C. Susdorf, J. Turnbull, M.O.L. Cambaliza, O.E. Salmon, A.-E.M. Kerlo<sup>1</sup>, T.N. Lavoie, R.M. Harvey, K.J. Davis, T. Lauvaux, A. Karion, C. Sweeney, W.A. Brewer, R.M. Hardesty, **K.R. Gurney**, J. Whetstone (2017) Precision Assessment for the Aircraft Mass Balance Method for Measurement of Urban Greenhouse Gas Emission Rates, *Elem Sci Anth*, **5**(26). <https://doi.org/10.1525/elementa.134>
88. **Gurney, K.R.**, J. Liang, R. Patarasuk, D. O'Keeffe, M. Hutchins, T. Lauvaux, J.C. Turnbull, P.B. Shepson (2017) Reconciling the differences between a bottom-up and inverse-estimated FFCO<sub>2</sub> emissions estimate in a large US urban area, *Elem Sci Anth*. 2017;5:44. DOI: <http://doi.org/10.1525/elementa.137>.
87. Huang, J. and **K.R. Gurney** (2017) Impact of climate change on U.S. building energy demand: Financial implications for consumers and energy suppliers, *Energy and Buildings*, 139, 747-754. <https://doi.org/10.1016/j.enbuild.2017.01.077>
86. Rao, P., **K.R. Gurney**, R. Patarasuk, Y. Song, C.E. Miller, R. Duren, A. Eldering (2017) Spatio-temporal variations in on-road CO<sub>2</sub> emissions in the Los Angeles Megacity, *AIMS Geosci*, **3**(2), 239-267. DOI: [10.3934/geosci.2017.2.239](https://doi.org/10.3934/geosci.2017.2.239)
85. Fischer, M.L., N. Parazoo, K. Brophy, X. Cui, S. Jeong, J. Liu, R. Keeling, T.E. Taylor, **K.R. Gurney**, T. Oda, H.Graven (2017) Simulating Estimation of California Fossil Fuel and Biosphere Carbon Dioxide Exchanges Combining In-situ Tower and Satellite Column Observations, *J. Geophys. Res.*, <https://doi.org/10.1002/2016JD025617>
- 2016**
84. **Gurney, K.R.**, J. Huang and K. Coltin (2016) Bias present in US federal agency power plant CO<sub>2</sub> emissions data and implications for the US clean power plan, *Env. Res. Lett.*, **11**, 064005, <https://doi.org/10.1088/1748-9326/11/6/064005>.
83. Huang, J. and **K.R. Gurney** (2016) Impacts of climate change on US building energy consumption: importance of building type, building technology, and space-time, *Energy*, **111**, 137-153. <https://doi.org/10.1016/j.energy.2016.05.118>
82. Huang, J. and **K.R. Gurney** (2016) The hidden spatiotemporal vulnerability of US building energy demand to climate change, *Climatic Change*, <https://doi.org/10.1007/s10584-016-1681-6>.
81. Lauvaux, T., N.L. Miles, A. Deng, S.J. Richardson, M.O. Cambaliza, K.J. Davis, B. Gaudet, **K.R. Gurney**, J. Huang, D. O'Keeffe, Y. Song, A. Karion, T. Oda, R. Patarasuk, D. Sarmiento, P. Shepson, C. Sweeney, J. Turnbull, and K. Wu (2016) High resolution atmospheric inversion of urban CO<sub>2</sub> emissions during the dormant season of the

Indianapolis Flux Experiment (INFLUX), *Journal of Geophysical Research*, **121**, <https://doi.org/10.1002/2015JD024473>.

80. Newman, S., X. Xu, **K.R. Gurney**, Y.-K. Hsu, K.-F. Li, X. Jiang, R. Keeling, S. Feng, D. O'Keefe, R. Patarasuk, K.W. Wong, P. Rao, M.L. Fischer, and Y.L. Yung (2016) [Toward consistency between trends in bottom-up CO<sub>2</sub> emissions top-down atmospheric measurements in the Los Angeles megacity](#), *Atmos. Chem. Phys.*, **16**, 3843-3863.
79. Patarasuk, P., **K.R. Gurney**, D. O'Keefe, Y. Song, J. Huang, P. Rao, M. Buchert, J. Lin, D. Mendoza, J.R. Ehleringer (2016) Application of high-resolution fossil fuel CO<sub>2</sub> emissions quantification to urban climate policy in Salt Lake County, Utah USA, *Urban Ecosystems*, 19(3), 1013-1039. <https://doi.org/10.1007/s11252-016-0553-1>.
78. Tian, H., C. Lu, P. Ciais, A.M. Michalak, J.G. Canadell, E. Saikawa, D.N. Huntzinger, **K.R. Gurney**, S. Sitch, B. Zhang, J. Yang, P. Bousquet, L. Bruhwiler, G. Chen, E. Dlugokencky, P. Friedlingstein, J. Melillo, S. Pan, B. Poulter, R. Prinn, M. Saunio, C.R. Schwalm, S.C. Wofsy (2016) Biogenic CH<sub>4</sub> and N<sub>2</sub>O emissions overwhelm land CO<sub>2</sub> sink, contributing to climate change, *Nature*, <https://doi.org/10.1038/nature16946>.
77. Feng, S., T. Lauvaux, S. Newman, P. Rao, R. Ahmadov, A. Deng, L. I. Díaz-Isaac, R. M. Duren, M. L. Fischer, C. Gerbig, **K.R. Gurney**, J. Huang, S. Jeong, Z. Li, C. E. Miller, D. O'Keefe, R. Patarasuk, S. P. Sander, Y. Song, K. W. Wong, and Y. L. Yung (2016) [LA Megacity: a High-Resolution Land-Atmosphere Modelling System for Urban CO<sub>2</sub> Emissions](#), *Atmospheric Chemistry and Physics*, 16,9010-9045.
76. Wong, K.W., T.J. Pongetti, T. Oda, P. Rao, **K.R. Gurney**, S. Newman, R. Duren, C.E. Miller, Y.L. Yung, and S.P. Sander (2016) Monthly trends of top-down methane emissions in Los Angeles Basin from 2011 to 2015, *Atmospheric Chemistry and Physics*, **16**, 13121-13130
75. Zhang, X., **K.R. Gurney**, P.J. Rayner, D.F. Baker, and Y. Liu (2016) [Sensitivity of simulated CO<sub>2</sub> concentration to sub-annual variations in fossil fuel CO<sub>2</sub> emissions](#), *Atmospheric Chemistry and Physics*, **16**, 1907-1918

#### 2015

74. **Gurney, K.R.**, R. Patarasuk, I. Razlivanov, Y. Song, D. O'Keefe, J. Huang, Y. Zhou, P. Rao (2015) [Comment on "Analysis of high-resolution utility data for understanding energy use in urban systems"](#), *J. Ind. Ecol.*, DOI: 10.1111/jiec.12358
73. **Gurney, K.R.**, P. Romero-Lankao, K. Seto, C. Kennedy, N., Grimm, J., Ehleringer, P. Marcotullio, S. Pincetl, J.J. Feddema, S. Hughes, M.V. Chester, L. Hutya, J. Sperling, and D. Runfola (2015) [Climate change: Track urban emissions on a human scale](#), *Nature (Comment)*, **525**, 179-181 (10 September 2015), doi: 10.1038/525179a
72. Ogle, S., K. Davis, T. Lauvaux, A. Schuh, D. Cooley, T. O. West, L. S. Heath, N. Miles, S. Richardson, F. Jay Breidt, **K.R. Gurney**, and S. Denning (2015) An Approach for [Verifying Greenhouse Gas Emissions Inventories with Atmospheric CO<sub>2</sub> Measurement Data](#), *Env. Res. Lett.* **10**, doi:10.1088/1748-9326/10/3/034012
71. Turnbull, J., C. Sweeney, A. Karion, T. Newberger, P. Tans, S. Lehman, K.J. Davis, N.L. Miles, S.J. Richardson, T. Lauvaux, M.O. Cambaliza, P. Shepson, **K.R. Gurney**, Y. Song, I. Razlivanov, A. Zondervan (2015) [Towards quantification of fossil fuel CO<sub>2</sub> and trace gas emissions from an urban area: Results from the INFLUX experiment](#), *Journal of Geophysical Research, Atmos*, **120**. DOI: 10.1002/2014JD022555.
70. **Gurney, K.R.** (2015) [What is the role for carbon cycle science in the proposed EPA power plant rule?](#) *Earth Perspectives*, **2:1**, DOI: 10.1186/s40322-015-0028-1.
69. Cambaliza, O.M., P. B. Shepson, J. Bogner, D. R. Caulton, B. Stirm, C. Sweeney, S.A. Montzka, **K.R. Gurney**, K. Spokas, O.E. Salmon, T.N. Lavoie, A. Hendricks, K. Mays, J. Turnbull, B.R. Miller, T. Lauvaux, K. Davis, A. Karion, B. Moser, C. Miller, C. Obermeyer, J. Whetstone, K. Prasad, N. Miles, S. Richardson (2015) [Quantification and source apportionment of the methane emission flux from the city of Indianapolis](#), *Elementa: Science of the Anthropocene*, doi: 10.12952/journal.elementa.000037.

#### 2014

68. L.M. Bruhwiler, E. Dlugokencky, K. Masarie, M. Ishizawa, A. Andrews, J. Miller, C. Sweeney, P. Tans, D. Worthy, S. Houweling, M. Krol, P. Bergamaschi, C. Frankenberg, E.J. Dlugokencky, I. Morino, J. Notholt, V. Sherlock, D. Wunch, V. Beck, C. Gerbig, H. Chen, E.A. Kort, T. Röckmann, I. Aben, S.X. Fang, L.X. Zhou, P.P. Tans, P. Ciais, M. Steinbacher, L. Xu, T. Luan, D. Helmig, V. Petrenko, P. Martinerie, E. Witrant, A. Zuiderweg, R. Holzinger, J. Hueber, C. Thompson, J.W.C. White, W. Sturges, A. Baker, T. Blunier, D. Etheridge, M. Rubino, C. Cressot, F. Chevallier, P. Bousquet, C. Crevoisier, A. Fortems-Cheiney, R. Parker, I. Pison, R.A. Scheepmaker, S.A. Montzka, P.B. Krummel, L.P. Steele, R.L. Langenfelds, B.W. LaFranchi, G. Pétron, J.B. Miller, S.J. Lehman, A.E. Andrews, B. Hall, B.R. Miller, W. Neff, P.C. Novelli, J.C. Turnbull, D.E. Wolfe, **K.R. Gurney**, T.P. Guilderson, M. Inoue, O. Uchino, Y. Miyamoto, Y. Yoshida, T. Yokota, T. Machida, Y. Sawa, H. Matsueda, S.C. Biraud, T. Tanaka, S. Kawakami, P.K. Patra, S. Basu, S. Guerlet, A. Butz, O. Hasekamp, P. Krummel, P. Steele, R. Langenfelds, M. Torn, S. Biraud, B. Stephens, A. Fraser, P.I. Palmer, L. Feng, H. Boesch, A. Cogan, P.J. Fraser, S. O'Doherty, R.G. Prinn (2014) CarbonTracker-CH<sub>4</sub>: an assimilation system for estimating emissions of atmospheric methane, *Atmos. Chem. Phys.* **14**, 3991-4012.

67. Romero-Lankao, P., **K.R. Gurney**, K. Seto, M. Chester, R.M. Duren, S. Hughes, L.R. Hutyra, P. Marcotullio, L. Baker, N.B. Grimm, C. Kennedy, E. Larson, S. Pincetl, D. Runfola, L. Sanchez, G. Shrestha, A. Sarzynski, J. Sperling, E. Stokes (2014) [Towards a more integrated understanding of urbanization, urban areas and the carbon cycle](#), *Earth's Future*, **2**(10), 515-532.
66. Hutyra, L., R. Duren, **K.R. Gurney**, N. Grimm, E. Kort, E. Larson, G. Shrestha (2014) [Urbanization and the carbon cycle: Current capabilities and research outlook from the natural sciences perspective](#), *Earth's Future*, **2**(10), 473-495, doi: 10.1002/2014EF000255
65. **Gurney, K.R.** (2014) [The urban landscape: recent research quantifying carbon emissions down to the street level](#), *Carbon Management*, doi: 10.1080/17583004.2014.986849.
64. **Gurney, K.R.**, Huang, J. and K. Coltin (2014) Comment on Quick, J.C. (2014) Carbon dioxide emission tallies for 210 U.S. coal-fired power plants: A comparison of two accounting methods. *J. Air Waste Manage. Assoc.* 64: 73–79, *J. Air Waste Manage Assoc.*, **64**(11):1215-1217.
63. Zhang, X., **K.R. Gurney**, P. Rayner, Y. Liu, S. Asefi-Najafabady (2014) [Sensitivity of simulated CO<sub>2</sub> concentration to regriding of fossil fuel CO<sub>2</sub> emissions along global coastlines](#), *Geosci. Model Dev.*, **7**, 2867-2874.
62. Asefi-Najafabady, S., P. J. Rayner, **K.R. Gurney**, A. McRobert, Y. Song, K. Coltin, C. Elvidge, K. Baugh (2014) [A new global gridded dataset of CO<sub>2</sub> emissions from fossil fuel combustion: Methodology, evaluation and analysis](#), *J. Geophys. Res.* DOI: 10.1002/2013JD021296.
61. Cambaliza, O., P. B. Shepson, D. Caulton, B. Stirm, D. Samarov, **K.R. Gurney**, J. Turnbull, K. J. Davis, A. Possolo, A. Karion, C. Sweeney, B. Moser, A. Hendricks, T. Lauvaux, K. Mays, J. Whetstone, J. Huang, I. Razlivanov, N. L. Miles, and S. J. Richardson (2014) [Assessment of uncertainties of an aircraft-based mass-balance approach for quantifying greenhouse gas emissions](#), *Atmospheric Chemistry and Physics*, **14**, 9029-9050, doi:10.5194/acp-14-9029-2014.

### 2013

60. Ciais, P., A. J. Dolman, A. Bombelli, R. M. Duren, A. Peregón, P. Rayner, C. Miller, N. Gobron, G. Kinderman, G. Marland, N. Gruber, F. Chevallier, R. J. Andres, G. Balsamo, L. Bopp, F.-M. Bréon, G. Broquet, R. J. Dargaville, T. Battin, A. Borges, H. Bovensmann, M. Buchwitz, J. H. Butler, J. G. Canadell, R. B. Cook, R. DeFries, R. Engelen, **K.R. Gurney**, C. Heinze, M. Heimann, A. Held, M. Henry, B. E. Law, S. Luyssaert, J. Miller, T. Moriyama, C. Moulin, R. B. Myneni, C. Nussli, M. Obersteiner, D. Ojima, Y. Pan, J.-D. Paris, S. L. Piao, B. Poulter, S. Plummer, S. Quegan, P. Raymond, M. Reichstein, L. Rivier, C. Sabine, D. Schimel, O. Tarasova, R. Valentini, G. van der Werf, D. E. Wickland, M. Williams, and C. Zehner (2013) [Current systematic carbon cycle observations, and needs for implementing a policy-relevant carbon observing system](#), *Biogeosciences*, **11**, 3547-3602, doi: 10.5194/bg-11-3547-2014.
59. Peylin, P., R. M. Law, **K.R. Gurney**, F. Chevallier, A. R. Jacobson, T. Maki, Y. Niwa, P. K. Patra, W. Peters, P. J. Rayner, C. Rödenbeck, and X. Zhang (2013) [Global Atmospheric Carbon Budget: results from an ensemble of atmospheric CO<sub>2</sub> inversions](#), *Biogeosciences*, **10**, 6699–6720.
58. LaFranchi, B.W., G. Pétron, J.B. Miller, S.J. Lehman, A.E. Andrews, E. Dlugokencky, B.R. Miller, S.A. Montzka, B. Hall, W. Neff, C. Sweeney, J.C. Turnbull, D.E. Wolfe, P.P. Tans, **K.R. Gurney**, T.P. Guilderson (2013) [Constraints on emissions of carbon monoxide, methane, and a suite of hydrocarbons in the Colorado Front Range using observations of <sup>14</sup>CO<sub>2</sub>](#), *Atmos. Chem. Phys.*, **13**, 11101-11120, doi:10.5194/acp-13-11101-2013.
57. Nevison, C.D., D.F. Baker, and **K.R. Gurney** (2013) A methodology for estimating seasonal cycles of atmospheric CO<sub>2</sub> resulting from terrestrial net ecosystem exchange (NEE) fluxes using the Transcom T3L2 pulse-response functions, *Geosci Model Dev. Disc.* **5** (3), 2789-2809.
56. Zhang, X., **K.R. Gurney**, P. Peylin, Chevallier, F., Law, R., Patra, P.K., Rayner, P.J., Roedenbeck, C., Krol, M. (2013) [On the variations of regional CO<sub>2</sub> fluxes over temperate and boreal North America](#), *Glob. Biogeochem. Cyc.*, **27** doi:10.1002/gbc.20091
55. Nassar, R., L. Napier-Linton, **K.R. Gurney**, R.J. Andres, T. Oda, F. Vogel, F. Deng (2013) [Improving the temporal and spatial distribution of CO<sub>2</sub> emissions from global fossil fuel emission datasets](#), *J. Geophys. Res.*, **118**, 917-933 doi:10.1029/2012JD018196
54. Newman, S., S. Jeong, M. Fischer, X. Xu, C. Haman, B. Lefer, S. Alvarez, B. Rappenglueck, E.A. Kort, A.E. Andrews, J. Peischl, **K.R. Gurney**, C.E. Miller, and Y.L. Yung (2013) [Diurnal tracking of anthropogenic CO<sub>2</sub> emissions in the Los Angeles basin mega-city during spring, 2010](#), *Atm Chem and Physics*, **13**: 4359-4372
53. Mendoza, D., **Gurney, K.R.**, Geethakumar, S., Chandrasekaran, V., Zhou, Y., I. Razlivanov (2013) [U.S. Regional Greenhouse Gas Emissions Mitigation Implications based on High-Resolution Onroad CO<sub>2</sub> Emissions Estimation](#), *Energy Policy*, **55**, 386-395.

### 2012

52. **Gurney, K.R.**, Razlivanov, I., Song, Y. Zhou, Y., Benes, B., M. Abdul-Massih (2012) [Quantification of fossil fuel CO<sub>2</sub> on the building/street scale for a large US city](#) *Environ. Sci. & Tech.*, **46**, 12194-12202, dx.doi.org/10.1021/es3011282
51. Castillo, K.G. and **K.R. Gurney** (2013) [A Sensitivity Analysis of Surface Biophysical, Carbon, and Climate Impacts of Tropical Deforestation Rates in CCSM4-CNDV](#), *J. of Climate*, **26** (3), 805-821.
50. Castillo, K., Raymond, L. and **K.R. Gurney** (2012) [REDD+ in Developing Countries: Thinking Outside the Carbon Box](#), *Carbon Management*, **3**(5), 457-466.
49. Cragg, M.I, Y. Zhou, **K.R. Gurney**, and M.E. Kahn (2013) [Carbon Geography: The Political Economy of Congressional Support for Legislation Intended to Mitigate Greenhouse Gas Production](#), *Economic Inquiry*, DOI: 10.1111/j.1465-7295.2012.00462.x
48. **Gurney, K.R.**, Castillo, C.K.G., X. Zhang, and B. Li (2012) [A positive carbon feedback to ENSO and volcanic aerosols in the tropical terrestrial biosphere](#), *Glob. Biogeochem. Cyc.* **26**, GB1029, doi:10.1029/2011GB004129
47. Brioude, J., G. Petron, G.J. Frost, R. Ahmadov, W.M. Angevine, E.-Y. Hsie, S.-W. Kim, S.-H. Lee, S.A. McKeen, M. Trainer, F.C. Fehsenfeld, J.S. Holloway, J. Peischl, T.B. Ryerson, **K.R. Gurney** (2012) [A new inversion method to calculate emission inventories without a prior at mesoscale: Application to the anthropogenic CO<sub>2</sub> flux from Houston, Texas](#), *J. Geophys. Res.* **117**, D05312, 15 pp., doi:10.1029/2011JD016918
46. Castillo, C.K.G and **K.R. Gurney** (2012) [Surface biophysical-climate impacts of tropical deforestation with time-dependence: Sensitivity to deforestation rates](#), *J. of Earth Interactions*, **16**, 1-23, 10.1175/2011EI390.1

#### 2011

45. Zhou, Y., Weng, Q., **Gurney, K.R.**, Shuai, Y. and X. Hu (2011) [Estimation of the relationship between remotely sensed anthropogenic heat discharge and building energy use](#), *International Society for Photogrammetry and Remote Sensing*, **67**, 65-72.
44. **Gurney, K.R.** (2011) [Observing Human CO<sub>2</sub> Emissions](#), *Carbon Management*, **2** (3), 223-226.
43. Andryscio, N., Rosen, P., Popescu, V., Benes, B., and **K.R. Gurney** (2011) [Experiences in Disseminating Educational Visualizations](#), *International Symposium on Visual Computing*, **2**, 239-243.
42. **Gurney, K.R.** and W. Eckels, (2011) [Trend estimates in regional land-atmosphere carbon exchange and their seasonal drivers derived from atmospheric CO<sub>2</sub> inversions](#), *Tellus B*, **25**, DOI: 10.1029/2010GB003813.
41. Zhou, Y., and **K. R. Gurney** (2011), [Spatial relationships of sector-specific fossil fuel CO<sub>2</sub> emissions in the United States](#), *Glob. Biogeochem. Cycles*, **25**, GB3002, doi:10.1029/2010GB003822.
40. Hayes, D.J., A.D. McGuire, D.W. Kicklighter, **K.R. Gurney**, T.J. Burnside, and J.M. Melillo, (2011) [Is the northern high latitude land-based CO<sub>2</sub> sink weakening?](#), *Glob Biogeochem. Cyc.*, **25**, 10.1029/2010GB003813.
39. Anderson, R.G., Canadell, J.G., Randerson, J.T., Jackson, R.B., Hungate, B.A., Baldocchi, D.D., Ban-Weiss, G.G., Bonan, G.B., Caldeira, K., Cao, L., Diffenbaugh, N.S., **Gurney, K.R.**, Kueppers, L.M., Law, B.E., Luysaert, S., O'Halloran, T.L. (2011) [Biophysical considerations in forestry for climate protection](#), *Front. Ecol. Environ.* doi:10.1890/090179.

#### 2010

37. Canadell, P., Ciais P., Dhakal S., Dolman H., Friedlingstein P., **Gurney K.R.**, Held A., Jackson R.B., Le Quere C., Malone E.L., Ojima D.S., Patwardhan A., Peters G.P., Raupach M.R. (2010) [Interactions of the carbon cycle, human activity, and the climate system: a research portfolio](#), *Current Opinion in Env. Sust.*, **4** (2), 301-311.
36. Zhou, Y. and **K.R. Gurney** (2010) [A New Methodology for Quantifying Residential and Commercial Fossil Fuel CO<sub>2</sub> Emissions at the Building Spatial Scale and Hourly Time Scale](#), *Carbon Management*, **1**(1), 45-56.
35. McGuire, A.D., D.J. Hayes, D.W. Kicklighter, M. Manizza, Q. Zhuang, M. Chen, M.J. Follows, **K.R. Gurney**, J.W. McClelland, J.M. Melillo, B.J. Peterson, R.G. Prinn (2010) An analysis of the carbon balance of the arctic basin from 1997 to 2006, *Tellus*, **62B**(5), 455-474, DOI: 10.1111/j.1600-0889.2010.00497.x
34. Parshall, L., **K.R. Gurney**, S.A. Hammer, D.L. Mendoza, Y. Zhou, and S. Geethakumar, (2010) [Modeling Energy Consumption and CO<sub>2</sub> Emissions at the Urban Scale: Methodological Challenges and Insights from the United States](#), *Energy Policy*, **38** (9), 4765-4782, doi:10.1016/j.enpol.2009.07.006.
33. Corbin, K., S. Denning, **K.R. Gurney** (2010) [Effects of Spatially and Temporally Redistributing Fossil Fuel Emissions on Atmospheric CO<sub>2</sub> Concentrations](#), *Tellus B*, **62**, 506-511. doi: 10.1111/j.1600-0889.2010.00480.x

#### 2009

32. Le Quere C. M.R. Raupach, J.G. Canadell, G. Marland L. Bopp, P. Ciais, T.J. Conway, S.C. Doney, R.A. Feely, P. Foster, P. Friedlingstein, **K.R. Gurney**, R.A. Houghton, J.I. House, C. Huntingford, P.E. Levy, M.R. Lomas, J. Majkut, N. Metzler, J.P. Ometto, G.P. Peters, I.C. Prentice, J.T. Randerson, S.W. Running, J.L. Sarmiento, U. Schuster, S. Sitch, T. Takahashi, N. Viovy, G.R. van der Werf & F.I. Woodward. (2009) [Recent Trends in the sources and sinks of carbon dioxide](#), *Nature Geosciences*, **2** (12), 831-836, doi: 10.1038/ngeo689.



31. Mays, K.L., P.B. Shepson, B.H. Stirm, A. Karion, C. Sweeney, **K.R. Gurney** (2009) [Aircraft-Based Measurements of the Carbon Footprint of Indianapolis](#). *Environ. Sci. Technol.*, DOI: 10.1021/es901236b.
30. **Gurney, K.R.** (2009) China at the Carbon Crossroads, *Nature News & Views*, **458**, 979-980.
29. **Gurney, K.R.**, D. Mendoza, Y. Zhou, M Fischer, S. de la Rue du Can, S. Geethakumar, C. Miller (2009) [High resolution fossil fuel combustion CO<sub>2</sub> emissions fluxes for the United States](#), *Environ. Sci. Technol.*, **43**(14), 5535-5541, doi:10.1021/es900806c.
28. Andryscio, N, **K.R. Gurney**, B. Benes, & K. Corbin (2009) A system for visual exploration of CO<sub>2</sub> data, *IEEE Computer Graphics and Applications*, p. 6-11, Jan/Feb.

#### 2008

27. **Gurney, K.R.**, and A.S. Denning (2008) TransCom 3: Annual Mean CO<sub>2</sub> Flux Estimates from Atmospheric Inversions (Level 1). Data set. Available on-line [http://daac.ornl.gov/] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/895.
26. Alexandrov, G.A., D. Chan, M. Chen, **K.R. Gurney**, K. Higuchi, A. Ito, C.D. Jones, A. Komarov, K. Mabuchi, D.M. Matross, F. Veroustraete, W.W. Verstraeten (2008) Chapter Nineteen Model-Data Fusion in Studies of the Terrestrial Carbon Sink, *Developments in Integrated Environmental Assessment*, **3**, 329-344.
25. Lokupitiya, R.S., D. Zupanski, A.S Denning, **K.R. Gurney**, R. Kawa & M. Zupanski (2008) Estimation of CO<sub>2</sub> fluxes at regional scale using the maximum likelihood ensemble filter, *J. Geophys. Res.* **113**, D20110, doi:10.1029/2007JD009679.
24. **Gurney, K.R.** and L. Raymond (2008) [Targeting deforestation rates in climate change policy: A 'preservation pathway' approach](#), *Carbon Balance and Management*, **3** (2), doi:10.1186/1750-0680-3-2.
23. **Gurney, K.R.**, D. Baker, P. Rayner, A.S. Denning & TransCom 3 L2 modelers (2008) [Interannual variations in regional net carbon exchange and sensitivity to observing networks estimated from atmospheric CO<sub>2</sub> inversions for the period 1979 to 2006](#), *Glob. Biogeochem. Cyc.*, **22**, GB3025, doi:10.1029/2007GB003082.

#### 2007

22. Goetz, S.J., M.C. Mack, **K.R. Gurney**, and R.A. Houghton, (2007) Ecosystem responses to recent climate change at Northern high latitudes: observations and model results contrasting Northern Eurasia and North America, *Environ. Res. Lett.*, **2**, 0450312 (9pp), doi:10.1088/1748- 9326/2/4/045031.
21. Butler, A., D. Thompson, and **K.R. Gurney**, (2007) Observed Relationships between the Southern Annular Mode and Atmospheric Carbon Dioxide, *Glob. Biogeochem. Cyc.*, **21**, GB4014, doi: 101029/2006GB002796.
20. Stephens, B.B., **K.R. Gurney**, P.P. Tans, C. Sweeney, W. Peters, L. Bruhwiler, P. Ciais, M. Ramonet, P. Bousquet, T. Nakazawa, S. Aoki, T. Machida, G. Inoue, N. Vinnichenko, J. Lloyd, A. Jordan, O. Shibistova, R.L. Langenfelds, L.P. Steele, R.J. Francey, & A.S. Denning (2007) Weak northern and strong tropical land carbon uptake from vertical profiles of atmospheric CO<sub>2</sub>, *Science*, **316**, 1732-1735.

#### 2006

19. Patra, P, **K.R. Gurney** and the TransCom 3 modelers (2006) Sensitivity of inverse estimation of annual mean CO<sub>2</sub> sources and sinks to ocean-only sites vs all-sites obs. Networks, *GRL*, **33**, doi:10.1029/2005GL025403.
18. Baker, D. R.M . Law, **K.R. Gurney**, A.S. Denning, P.J. Rayner, and TransCom 3 modelers (2006) TransCom 3 inversion intercomparison: Impact of transport model errors on the interannual variability of regional CO<sub>2</sub> fluxes, 1988-2003, *Glob. Biogeochem. Cyc.*, **20**, GB1002, doi:10.1029/2004GB002439.

#### 2005

17. Michalak, A.M., Hirsch, A., Bruhwiler, L., **Gurney, K.R.**, Peters, W., Miller, J.B., and Tans, P.P. (2005) Maximum likelihood estimation of covariance parameters for Bayesian atmospheric trace gas surface flux inversions, *J. Geophys. Res.*, **110**, D24017, doi:10.1029/2005JD005970.
16. Yuen, C-W., Higuchi, K., and TransCom-3 Modelers (2005) Impact of Fraserdale CO<sub>2</sub> Observations on Annual Flux Inversion of the North America Boreal Region, *Tellus*, **57B**, 203-209.
15. **Gurney, K.R.**, Y.H.Chen, T. Maki, S.R. Kawa, A. Andrews, Z. Zhu (2005) [Sensitivity of Atmospheric CO<sub>2</sub> Inversion to Seasonal and Interannual Variations in Fossil Fuel Emissions](#), *J. Geophys. Res.* **110** (D10), 10308-10321.

#### 2004

14. **Gurney, K.R.** (2004) Towards robust regional estimates of carbon sources and sinks using atmospheric transport models - the TransCom 3 Experiment, *World Resource Review*, **16** (2), 243-258.

13. **Gurney, K.R.**, R.M. Law, A.S. Denning, P.J. Rayner, B. Pak, and the TransCom 3 L2 modelers (2004) [Transcom 3 Inversion Intercomparison: Control results for the estimation of seasonal carbon sources and sinks](#), *Glob. Biogeochem. Cyc.*, **18**, GB1010, doi:10.1029/2003GB002111.
- 2003**
12. Dilling, L., S. Doney, J. Edmonds, **K.R. Gurney**, R. Harriss, D. Schimel, B. Stephens, & G. Stokes (2003) The role of carbon cycle observations and knowledge in carbon management," *Annu. Rev. Env. Resour.*, **28**, 521-58.
  11. Patra, P.K., S. Maksyutov, and TransCom 3 modelers (2003) Sensitivity of optimal extension of CO<sub>2</sub> observation networks to model transport, *Tellus*, **55B**, 498-511.
  10. Maksyutov, S., T. Machida, H. Mukai, P. Patra, T. Nakazawa, G. Inoue, and TransCom 3 modelers (2003) Effect of recent observations on Asian CO<sub>2</sub> flux estimates with transport model inversions, *Tellus*, **55B**, 522-529, 2003.
  9. Law, R., Y.H. Chen, **K.R. Gurney**, P. Rayner, A.S. Denning, and TransCom 3 modelers (2003) TransCom3 CO<sub>2</sub> inversion intercomparison: 2. Sensitivity of annual mean results to data choices, *Tellus*, **55B** (2), 512-521, 2003.
  8. **Gurney, K.R.**, R.M. Law, A.S. Denning, P.J. Rayner, D. Baker, P. Bousquet, L. Bruhwiler, Y.H. Chen, P. Ciais, S. Fan, I.Y. Fung, M. Gloor, M. Heimann, K. Higuchi, J. John, E. Kowalczyki, T. Maki, S. Maksyutov, P. Peylin, M. Prather, B. Pak, J. Sarmiento, S. Taguchi, T. Takahashi, C.W. Yuen (2003) Transcom 3 CO<sub>2</sub> Inversion Intercomparison: 1. Annual mean control results and sensitivity to transport and prior flux information, *Tellus*, **55B**, 555-579.
- Before 2003**
7. Engelen, R.J., A. Scott Denning, **K.R. Gurney**, and TransCom 3 modelers (2002) On Error Estimation in Atmospheric CO<sub>2</sub> Inversions, *J. of Geophys. Res.*, **107** (D22), 4635.
  6. **Gurney, K.R.**, R.M. Law, A.S. Denning, P.J. Rayner, D. Baker, P. Bousquet, L. Bruhwiler, Y.H. Chen, P. Ciais, S. Fan, I.Y. Fung, M. Gloor, M. Heimann, K. Higuchi, J. John, T. Maki, S. Maksyutov, K. Masarie, P. Peylin, M. Prather, B.C. Pak, J. Randerson, J. Sarmiento, S. Taguchi, T. Takahashi, C.W. Yuen (2002) [Towards robust regional estimates of CO<sub>2</sub> sources and sinks using atmospheric transport models](#), *Nature*, **415**, 626-630, February 7.
  5. Engelen, R.J., A.S. Denning, **K.R. Gurney**, and G.L. Stephens (2001) Global observations of the carbon budget: I. Expected satellite capabilities in the EOS and NPOESS eras, *J. of Geophys. Res.*, **106** (D17), 20055-20068.
  4. Denning, A.S. M. Holzer, **K.R. Gurney**, M. Heimann, R.M. Law, P.J. Rayner, I.Y. Fung, S. Fan, S. Taguchi, P. Friedlingstein, Y. Balkanski, M. Maiss, and I. Levin, (1999) Three-dimensional transport and concentration of SF<sub>6</sub>: A model intercomparison study (Transcom 2), *Tellus*, **51B**, 266-297.
  3. **Gurney, K.R.** (1998) Evidence for increasing ultraviolet irradiance at Point Barrow, Alaska, *Geophys. Res. Lett.*, **25** (6), 903-906, March 15.
  2. **Gurney, K.R.** (1991) National Greenhouse Accounting, *Nature*, **353**, 23.
  1. **Gurney, K.R.**, A.D.A. Hansen, and H. Rosen (1998) Methane and Carbon Dioxide Increases in the Urban Boundary Layer: Inferences from Whole Column Infrared Absorbance Measurements *Geophys. Res. Lett.*, **15**, 32-35.

## BOOKS

Makhijani A. and **K.R. Gurney**, "Mending the Ozone Hole: Science, Technology and Policy," MIT Press, 1995.

## BOOK CHAPTERS

Alexandrov, GA, D Chan, M Chen, **K.R. Gurney**, K Higuchi, A Ito, CD Jones, A Komarov, K Mabuchi, DM Matross, F Veroustraete, WW Verstraeten (2008) "Model-data fusion in studies of the terrestrial carbon sink" in *Environmental Modelling, software and decision support: State of the art and new perspective*, Jakeman, AJ, AA Voinov, AE Rizzoli, SH Chen (eds), Elsevier, October 2008, ISBN: 978-0-08-056886-7

Parshall, L., S.A. Hammer, **K.R. Gurney** (2012) Chapter 4: Energy consumption and CO<sub>2</sub> emissions in urban counties in the United States with a case study of the New York Metropolitan area, in *Cities and Climate Change, Responding to an Urgent Agenda*, Hoornweg, D., M. Freire, M.J. Lee, P. Bhada-Tata, and B. Yuen (eds), World Bank, Wash, DC.

**Gurney, K. R.**, P. Romero-Lankao, S. Pincetl, M. Betsill, M. Chester, F. Creutzig, K. Davis, R. Duren, G. Franco, S. Hughes, L. R. Hutyrá, C. Kennedy, R. Krueger, P. J. Marcotullio, D. Pataki, D. Sailor, and K. V. R. Schäfer, 2018: Chapter 4: Understanding urban carbon fluxes. In *Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report*. [Cavallaro, N., G. Shrestha, R. Birdsey, M. A. Mayes, R. G. Najjar, S. C. Reed, P. Romero-Lankao, and Z. Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 189-228, doi: 10.7930/SOCCR2.2018.Ch4

## OTHER PUBLICATIONS (a sample)

Bernow, S., M. Becker, B. Biewald, **K.R. Gurney**, R. Hornby, D. Marron, R. Rosen, and D. Singh, "Environmental Impacts of Long Island's Energy Choices: The Environmental Benefits of Demand-Side Management", Tellus Institute, September, 1990.

Makhijani, A., **K.R. Gurney** and Annie Makhijani, "Saving Our Skins: The Causes and Consequences of Ozone Layer Depletion and Policies for its Restoration and Protection", IEER, February 19, 1992.

Ko, M.K.W., N.D. Sze, D.T. Chang, G.I. Molnar, and **K.R. Gurney**, "Estimates of the Lifetimes and Global Warming Potentials of Chemical Compounds", AER, Inc., March 1992.

Makhijani, A. and **K.R. Gurney**, "Petition Under the Clean Air Act to the Administrator of the EPA for Reclassification of HCFC-22, HCFC-141b, and HCFC-142b as Class I Compounds, and Other Matters Related to the Protection of the Ozone Layer", Submitted to the Administrator of the EPA, April 14, 1992.

Franke, B., **K.R. Gurney**, A. Makhijani and M. Hoenig, "Uranium Doses to Workers at The Feed Materials Production Center -- Six Case Studies", IEER, December 23, 1992.

**Gurney, K.R.** (1996) "Saving the Ozone Layer Faster", *Technology Review*, January, 1996.

**Gurney, K.R.** "The Economics of Mitigating Climate Change: Boom or Bust?," Briefing Paper for the Union of Concerned Scientists, Sound Science Initiative, July 1997.

**Gurney, K.R.** "Warm, Dangerous Wind is Blowing Across the Planet," Op/Ed, The Santa Barbara News-Press, November 2, 1997.

**Gurney K.R.** and J. Neff, "Carbon Sequestration Potential in Canada, Russia, and the United States Under Article 3.4 of the Kyoto Protocol," World Wildlife Fund, June 2000.

**Gurney, K.R.**, R. Law, P. Rayner, and S. Denning, "TransCom 3 Experimental Protocol," Department of Atmospheric Science, Colorado State University, paper no. 707, July 2000.

**Gurney, K.R.** (2003) Book review of Fay and Golomb, "Energy and the Environment", *EOS Trans. Amer. Geophys. Union*, **84** (17), 2003.

**Gurney, K.R.** "Post-2012 LULUCF Options", white paper prepared for World Wildlife Fund, February 2006.

**Gurney, K.R.** "How 'sinks' nearly sunk the Kyoto Protocol", Insights Last Word, Purdue University, Fall/Winter 2006.

**Gurney, K.R.** "Resizing China's footprint on climate," Op/Ed, *South China Morning Post*, 12/31/2007.

**Gurney, K.R.**, W. Ansley, D. Mendoza, B. Seib, G. Petron, G. Frost, J. Gregg, M. Fischer, D. Pataki, K. Ackerman, S. Houweling, K. Corbin, R. Andres and T.J. Blasing, (2007) Research needs for process-driven, finely resolved fossil fuel carbon dioxide emissions, *EOS Trans. Amer. Geophys. Union*, **88** (49), 542-543.

**Gurney, K.R.**, Raymond, L., Cason, T. and H. Rowe, "A chance to compete fairly in marketplace", Op/Ed, *Indianapolis Star*, 5/31/2009.

**Gurney, K.R.**, H.I Rowe, and M. Ridders, "Forging a comprehensive strategy on climate change, Guest Commentary, *Telluride Daily Planet*, 8/25/2009

**Gurney, K.R.** (2010) "Stop Listening to Scientists?," letter, *Science*, 327, p. 780, February 12.

**Gurney, K.R.**, "Midwest should embrace clean-energy opportunities," Op/Ed, *The Fort Wayne Journal Gazette*, 5/11/2010.

Canadell, P., Ciais P., **Gurney K.R.**, Le Quere C., Piao, S., Raupach M.R., and C. Sabine (2011) An international effort to quantify regional carbon fluxes, *EOS Trans. Amer. Geophys. Union*, **92** (10), 81-88.

**Gurney, K.R.** (2013) Turning Point, Kevin Gurney, *Nature*, **500**, 245, 8 August.

**Gurney, K.R.** (2013) Beyond Hammers and Nails: Mitigating and Verifying Greenhouse Gas Emissions, *EOS Trans. Amer. Geophys. Union*, **94** (22), 199-200, May 28.

**Gurney, K.R.** and D. O'Keeffe (2013) Crowdsourcing power plant carbon dioxide emissions data, *EOS Trans. Amer. Geophys. Union*, **94**(43), 385-386.

Over 250 public talks and poster presentations

## **POSTDOCTORAL SCHOLARS**

Terry Song (current)  
 Pawlok Dass (current)  
 Geoffrey Roest (current)  
 Jianming Huang (2015-2018, research scientist, ESRI)  
 Preeti Rao (2013-2016, Research Scientist, University of Michigan)  
 Xia Zhang (2009-2014, postdoctoral researcher at San Diego State University)  
 Igor Razlivanov (2011-2013, current position unknown)  
 Salvi Asefi-Najafabady (2012-2015, Faculty research associate at University of Virginia)

Risa Patarasuk (2013-2016, postdoctoral research, UC Irvine)  
Yuyu Zhou (2008-2010, Assistant Professor at Iowa State University)

### **GRADUATE STUDENTS**

Taha Moiz (current, Ph.D., School of Sustainability)  
Darragh O'Keeffe (2017, M.A., School of Sustainability)  
Maya Hutchins (current, Ph.D. track, Geographical Science & Urban Planning)  
Ryan Anderson (2015, M.A., Sustainability)  
Scott Norby-Castillo (2016, M.A., Sustainability)  
Jianhua Huang (2016 Ph.D., Life Sciences)  
Yang Song (2018 Ph.D., Life Sciences)  
Vicky Liao (2013, M.S., co-advised with SGSUP)  
Kevin Coltin (2013, M.S., co-advised with SMSS, current: Analyst, Adv. Analytics & Modeling, Deloitte)  
Daniel Mendoza (2012, Ph.D., current: postdoc, Dept. Geology, Univ. of Utah)  
Charlotte Castillo (2012, Ph.D., , Ross Fellowship, Fullbright scholar, current: Professor at Manila Observatory, Ateneo de Manila University)  
Vandhana Chandrasekaran (2011, M.S., co-advised with Computer Sci., current: Assoc. Advisory at PwC)  
Advait Godbole (2011, M.S., current: unknown)  
Nalin Sahni (2010, M.S., co-advised with Civil Engineering, current: unknown)  
Sarith Geethakumar (2010, M.S., co-advised with Comp. Sci., current: Senior Director, Mobile & Product Security, American Express)  
Warren Eckels (2009, M.S., current: Adjunct Instructor at Ivy Tech Community College)

### **COURSES TAUGHT**

INF 601, School of Informatics, Computing, and Cyber Systems, NAU  
Guest lecturer in numerous courses, School of Life Sciences, School of Sustainability, ASU  
Collated all climate change related courses currently offered at ASU in order to centralize a climate change course offering – upcoming.  
BIO 320: Fundamentals of Ecology (undergraduate), ASU  
BIO 182: General Biology II (undergraduate), ASU  
EAS 113/NRES 290/AGRY 290: Introduction to Environmental Sciences (undergraduate), Purdue University  
EAS 425: Carbon neutrality at Purdue (undergraduate/graduate) , Purdue University  
EAS 591T: Principals of Terrestrial Ecosystem Ecology (graduate) , Purdue University  
EAS 591A: Anthropogenic Climate Change (graduate) , Purdue University  
Guest lecturer, Department of Atmospheric Science, Colorado State University, 1999 – 2005  
Faculty lecturer and field instructor, Cruising for Conservation, Coastal Marine Education and Research Academy (CMERA), 2016  
Instructor, SPATIAL Isotopes in Biogeochemistry & Ecology course, 2013-2017

### **COMMITTEE SERVICE**

Janet Reyna, Arizona State University, Ph.D. candidate, Advisor: Dr. Mikhail Chester  
Amy Hawes, Dept of Atmospheric Sci, Colorado State University, Ph.D. candidate, Advisor: Dr. Dave Thompson  
Kathy Corbin, Dept of Atmospheric Sci, Colorado State University, Ph.D. Candidate, Advisor: Dr. Scott Denning  
Ryan Sriver, Dept of Earth and Atmospheric Sciences, Purdue University, Advisor: Dr. Matt Huber  
Megan Walker, Dept of Earth and Atmospheric Sciences, Purdue University, Advisor: Dr. Noah Diffenbaugh  
Jinyun Tang, Dept of Earth and Atmospheric Sciences, Purdue University, Advisor: Dr. Qianlai Zhuang

**Total cites: 11352 (Google Scholar, 11/29/2019)**

**h-index: 49 (Google Scholar, 7/14/2020).**