

Assessing Food Insecurity on Campus

A National Look at Food Insecurity among America's College Students

Kristin Blagg urban institute Craig Gundersen UNIVERSITY OF ILLINOIS

Diane Whitmore Schanzenbach brookings institution and northwestern university August 2017 James P. Ziliak UNIVERSITY OF KENTUCKY

In this brief, we report nationally representative estimates of food insecurity among college students using data from the October and December Supplements to the Current Population Survey (CPS). We find that levels of food insecurity among households with students in four-year colleges and vocational education were 11.2 and 13.5 percent, respectively, in 2015—rates that are largely similar to national levels. However, households with students enrolled in two-year colleges were more likely to be food insecure in the period after the 2008 recession, with average rates of food insecurity among households with two-year college students dropped to an estimated 13.3 percent.

Food insecurity has emerged as a leading public health concern in the United States because of the number of households experiencing food insecurity and its associated negative health consequences (Coleman-Jensen et al. 2016; Gundersen and Ziliak 2015). Some researchers and policymakers have focused their attention on food insecurity rates among college students. Food insecurity among college students has been associated with poorer health, poorer academic performance, and mental health symptoms such as depression and anxiety (Freudenberg et al. 2011; Goldrick-Rab, Broton, and Eisenberg 2015; Knol et al. 2017; Patton-Lopez et al. 2014).

Levels of food insecurity are likely to differ across types of college students. Because college students overall are more likely to come from higher-income families, the rate of food insecurity among college students may be lower than the rate in the general population. But some college students—in particular, those attending two-year colleges—given their own characteristics and their family characteristics, are likely at greater risk of food insecurity. We use nationally representative data to examine these issues.

Previous survey-based studies of college students have examined the prevalence of food insecurity on individual college campuses. These studies have reported widely ranging rates of food insecurity. For example, one study, examining students at the University of Alabama, identified 14 percent of students as food insecure, close to the national average (Gaines et al. 2014). However, a recent survey of community college students from 70 campuses estimated that 67 percent of respondents were food insecure (Goldrick-Rab, Richardson, and Hernandez 2017). As the authors of these reports have themselves noted, the findings are limited, in part because of nonrepresentative samples and very low response rates. In this brief, we fill an important gap in the literature by producing nationally representative numbers on the percentage of postsecondary students who are food insecure by using Current Population Survey (CPS) data from 2001 to 2015. We believe this is the first time these data have been reported for a nationally representative sample of this group.

Methodology

The December Supplement to the CPS is the source for the official measure of food insecurity, as reported by the US Department of Agriculture. The survey measure is based on self-assessed responses to a series of 18 questions (10 if no child is residing in the household) fielded to a nationally representative sample of roughly 40,000 to 50,000 households per year, including students living at home, in dormitories, and off campus. With the exception of the first question (which addresses worries about food running out), each question asks about reductions in food consumption because of financial constraints. We identify households and individuals as food insecure if they have a "low" or "very low" food security status at any point during the previous 12 months, which is consistent with the definition used in the official food insecurity rates reported by the US Department of Agriculture (Coleman-Jensen et al. 2016).¹

To estimate food insecurity among current students, we combine the December CPS data with data from the October CPS Supplement, which tracks detailed educational enrollment, allowing us to calculate separate estimates for students by type of college.²

We identify three categories of students: students attending two-year colleges, those attending four-year colleges, and those in vocational education or training.³ Students are identified only if they are enrolled at the undergraduate level (i.e., first through fourth year of college).⁴ Table 1 presents information on the characteristics of adults in a pooled sample of the last five years (2011–15) of CPS data. Overall, students are younger and less likely to be a head of household than nonstudents. Among students in two- and four-year colleges, over half live with a parent or in a dormitory and are counted as

part of the parent's household. At least 3 in 10 are themselves household heads. Among students in two-year colleges, over one in five has children, and 31 percent are older than age 25. Students in four-year colleges are less likely than those in two-year colleges to have a child or be older than 25. Adults in vocational education are substantially more likely to be a household head, older than 25, and have a child than students in two- and four-year colleges.

TABLE 1

Characteristics of Adults in Higher Education, 2011–15

Proportion of CPS sample, classified by household status and age

		Adults in two-year	Adults in four-year	Adults in vocational
Characteristic	All adults	colleges	colleges	education
Household status				
Household head or spouse	77%	35%	30%	65%
Child of household head	11%	52%	54%	24%
Roommate or boarder	2%	3%	9%	2%
Children in household				
One or more own children	39%	22%	14%	35%
Age				
18-25	14%	68%	77%	30%
Older than 25	86%	32%	23%	70%

Source: Urban Institute analysis of data from the October and December CPS Supplements.

Note: A student is counted as a child of the household head if he or she is the child, foster child, or grandchild of the household head. Individuals not represented in the Household Status category are individuals who are other relatives of the household head, an unmarried partner of the household head, or other nonrelative. Figures for all adults (age 18 or older, including adult students) are reported for the sample of individuals who were sampled in both the October and December CPS Supplements. Estimates are weighted using the person-level supplement weight (wtsupp). All adults, n = 186,770; adults in two-year colleges, n = 3,345; adults in four-year colleges, n = 7,035; adults in vocational education, n = 2,796.

Food insecurity is commonly reported as a household-level measure, a convention we follow in this brief. A household is coded as containing a postsecondary student if any individual in the household is enrolled in a two- or four-year college or in vocational education in the October Supplement.⁵ Food insecurity can also be measured at the individual level. We find that the individual-level trends in food insecurity generally align with the household estimates.⁶

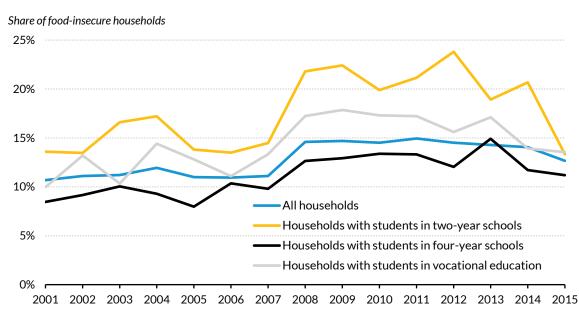
Trends in Student Food Insecurity over Time

Nearly one in five households with a two-year college student are identified as food insecure over the period from 2011 to 2015. The rate of food insecurity among households with students at a two-year college is persistently higher than rates in households overall and among households with students at four-year colleges across most of the sample period. The percentage of food-insecure two-year college students, reported at the household level, peaked at 23.8 percent in 2012 and has since fallen to 13.3 percent in 2015—a rate no different than for households overall.⁷ Figure 1 shows food insecurity among

households with college students over the longer period of 2001–15. Even at their highest levels, the nationally representative estimates of food insecurity rates among households containing two-year college students are nonetheless substantially lower than those reported in some previous campus-based studies.

FIGURE 1

Food Insecurity among Households with College Students, 2001-15



Twelve-month measure

Source: Urban Institute analysis of data from the October and December CPS Supplements. **Note:** Estimates are weighted using household-level food security status weight (fshwtscale).

Households with students enrolled in vocational education programs also tend to have rates of food insecurity that are higher than the average US household. However, with the exception of the period between 2008 and 2011, the rate of food insecurity in households with vocational education students is not statistically significantly different from the overall rate of food insecurity.

Households with students enrolled in four-year colleges generally have lower estimated rates of food insecurity than the average US household, but the difference is not statistically significant.

Demographics of Food Insecurity among College Students

We use individual-level data to investigate the correlates of food insecurity for adults enrolled in twoyear college, four-year college, or vocational education. We compare these individual-level estimates to levels of adult food insecurity for individuals who were part of both the October and December CPS Supplements. To generate a sufficiently large sample, we calculate these numbers by using five years of CPS data, from 2011 to 2015 (table 2).

This analysis demonstrates that food insecurity varies among postsecondary students by race, age, and employment status. White and black students enrolled in two-year schools are significantly more likely to be food insecure than the average adult of the same race, while white and black students enrolled in four-year schools are significantly less likely to be food insecure. Students at two-year and four-year schools who are younger than 20 are less likely to be food insecure, while those who are older than 30 are more likely than their non-student counterparts to be food insecure. Finally, those who are working full-time while attending a two- or four-year school are more likely to be food insecure than those who work full-time while not attending school. Among students in two-year schools, those who are unemployed and looking for work are the most likely to be food insecure.

When we look at the prevalence of food security among post-secondary students, we find that students at two-year schools do not significantly differ in their likelihood of being food insecure by their status as a full- or part-time student, nor do they differ by their attendance at a public or private institution. Students at four-year schools are less likely to be food insecure than those at two-year schools. Among the population of students at four-year schools, students are significantly more likely to be food insecure while enrolled as a part-time student and when enrolled at public institutions (table 3).

When we look at students who are attending four-year institutions and are younger than age 25, the differences are especially stark. Namely, those students are substantially less likely to be food insecure than the full population of people in that age range and, moreover, they are less likely to be food insecure than students attending two-year or vocational-education programs.

TABLE 2

Food Insecurity Rates among Adults, 2011–15

Twelve-month measure

Characteristic	All adults	Adults in two- year colleges	Adults in four- year colleges	Adults in vocational education	
Overall	13%	17%*	11%*	14%*	
Gender	10/0	1770	11/0	1470	
Male	12%	15%*	8%*	12%	
Female	13%	19%*	13%	15%*	
	1070	1770	1070	1370	
Race White	10%	15%*	9 %*	10%	
	10%	15%	9% 16%*	20%	
Hispanic	22%	28%*		20%	
Black	23%		18%* 25%	25% 8%*	
American Indian or Alaskan Native Asian or Pacific Islander	23% 7%	16% 7%	25% 8%	10%	
Multiple/other	20%	18%	15%*	26%	
Age					
18 to 20	17%	14%*	9%*	14%	
21 to 25	16%	19%*	10%*	17%	
26 to 30	15%	19%	13%	11%*	
31 to 50	14%	23%*	17%*	15%*	
50 and older	10%	15%*	15%*	10%	
Working status					
Full-time	9%	14%*	14%*	10%	
Part-time	14%	17%*	11%*	14%	
Not at work, typically employed	10%	12%	17%*	5%	
Unemployed, looking	29%	29%	19%*	26%	
Not in labor force	14%	17%*	9%*	17%*	
Region					
Northeast	11%	17%*	10%	14%*	
Midwest	12%	19%*	10%*	14%	
South	14%	19%*	12%*	16%	
West	12%	15%*	12%	12%	
Household status					
Head or spouse of head	11%	21%*	15%*	13%*	
Child, grandchild, foster child	16%	14%*	8%*	15%	
Roommate, boarder	14%	14%	9 %*	8%	
Other relative of head	17%	20%	18%	20%	
Unmarried partner of head	19%	25%	21%	11%*	
Other nonrelative	23%	16%	13%*	24%	
Own children in household		2070	2070		
No	12%	16%*	10%*	13%	
Yes	14%	20%*	18%*	16%	
103	14/0	2070	10/0	1070	

Source: Urban Institute analysis of data from the October and December CPS Supplements.

Notes: Individuals are classifed as Hispanic if they report their race as white and reported Hispanic ancestry. Individuals who report another race and Hispanic ancestry are classified as "multiple/other." An individual's region is recorded typically as his or her permanent address, rather than the dormitory address if living away from home. Estimates are weighted using the person-level supplement weight (wtsupp). All adults, n = 186,770; adults in two-year colleges, n = 3,345; adults in four-year colleges, n = 7,035; adults in vocational education, n = 2,796.

*p < 0.05 (i.e., the incidence of food insecurity for the given group was significantly different from all adults not in that group).

TABLE 3

Food Insecurity among Adults in Postsecondary Education, 2011–15

Twelve-month measure

Adult students by type of institution	Full-time status	Part-time status	Status not applicable	Public institution	Private institution	Institution not applicable
Two-year college	18%	16%		17%	21%	
Four-year college	10%	14%*		12%	9%*	
Vocational education	17%	19%	12%	18%	16%	12%

Source: Urban Institute analysis of data from the October and December CPS Supplements.

Notes: Estimates are weighted using the person-level supplement weight (wtsupp). adults in two-year colleges, n = 3,345; adults in four-year colleges, n = 7,035; adults in vocational education, n = 2,796.

*p < 0.05 (i.e., incidence of food insecurity for the given group is significantly different from students in the first baseline category of "full-time" and "public").

Limitations

This study substantially advances our understanding of the food insecurity status of a nationally representative sample of college students in the United States. But, like all studies, it is subject to limitations. First, the results presented here are purely descriptive; we do not estimate any causal relationship between enrollment in postsecondary education and level of food security or the impact of food insecurity on enrollment or other educational outcomes.

In addition, although the sample is nationally representative, the number of observations of students in the CPS is relatively limited: among households matched across the October and December CPS samples in 2015, 508 had at least one student enrolled at a two-year school, 1,123 had at least one student enrolled at a four-year school, and 467 had at least one student enrolled in vocational education. With low sample size comes higher statistical variability, so to achieve a larger sample size, increase the precision of the estimates, and allow us to study subsets of students, we pool five years of data for the individual-level analysis. As a check on our findings, we use the limited education enrollment questions in the full December Supplement, eliminating the need to merge to the October Supplement and doubling the sample size (appendix A, figure A4). The results obtained by using the larger dataset are qualitatively similar.

This study is also constrained by survey timing. The education supplement captures current enrollment in October, and the food insecurity measure collected in December estimates food insecurity for the prior 12 months. As a result, we cannot distinguish whether food insecurity is experienced prior to, during, or after postsecondary enrollment. As a check on this timing constraint, we estimate food insecurity using the 30-day food security scale. Our estimates show rates trend higher than the national average among two-year students and vocational students and lower than the national average among four-year students (appendix A, figure A1).

Potential Policy Options

Our study clearly shows that food insecurity is a concern for a substantial share of postsecondary students, and it was especially elevated among students at two-year colleges in the period after the 2008 recession. Appropriate policy remedies should be targeted toward the segments of students who appear most at risk, such as two-year college students, particularly those who are parents or heads of household.

The Supplemental Nutrition Assistance Program (SNAP; formerly known as the Food Stamp Program) is the primary social safety net program used to combat food insecurity in the United States. In this role, it has proven to be remarkably successful (Gundersen, Kreider, and Pepper 2017). However, SNAP is only available under certain circumstances for postsecondary students. It is important that SNAP be appropriately targeted, and to the extent that many college students come from high-income backgrounds and are only temporarily experiencing low income levels, limited eligibility for SNAP is appropriate. Students who are enrolled at least half-time are eligible for SNAP if they are under age 18 or older than 49, if they care for a child under age 6, or if they have difficulty obtaining child care for a child under age 12 (Lower-Basch and Lee 2014). Students are also eligible if they work at least 20 hours a week, receive work-study funding, receive Temporary Assistance for Needy Families, are unable to work because of a physical or mental disability, or are enrolled in an employment-related program (Lower-Basch and Lee 2014). Eligibility and take-up rates among college-age students are therefore quite low (Price et al. 2014).

The eligibility rules by employment status may deserve a renewed policy focus. At present, an enrolled postsecondary student must either participate in the Federal Work-Study Program or work at least 20 hours a week to be eligible for SNAP. Federal Work-Study funds tend to be concentrated in institutions with high numbers of dependent students from families with incomes of \$60,000 or higher and independent students with incomes of \$20,000 and higher (Scott-Clayton 2017; Smole 2005). While those students who are income eligible for SNAP who participate in work-study are automatically eligible for SNAP, similar students employed off campus must work at least 20 hours a week to receive the same benefit. Policymakers may want to consider lowering the minimum number of off-campus work hours that are necessary for otherwise-eligible students to receive SNAP benefits.

Conclusion

Our analysis shows that food insecurity is a concern for postsecondary students, particularly among students at two-year schools. In a nationally representative sample, nearly one in five two-year college students lives in a food-insecure household. Estimated rates are even higher among some groups. For example, African American students in two-year colleges have a food insecurity rate of 28 percent. These results suggest that a targeted approach is best for resolving issues of food insecurity in higher education. Consistent with this suggestion, although attention to students in postsecondary two-year

institutions and older students is warranted, the rates of food insecurity among those under age 25 in four-year institutions are far below those of other groups.

Appendix A

TABLE A1

Demographics of Two- and Four-Year Students as Recorded in IPEDS and CPS

IPEDS data from fall 2013, CPS data from October and December 2013

	Undergraduates at Four-Year Schools			Undergraduates at Two-Year Schools			
	IPEDS	CPS	CPS October and	IPEDS	CPS	CPS October	
Characteristic	universe	October	December	universe	October	and December	
Gender							
Male	45%	45%	46%	43%	45%	46%	
Female	55%	55%	54%	57%	55%	54%	
Age							
18-24	74%	75%	74%	58%	66%	64%	
Older than 24	26%	25%	26%	42%	34%	36%	
Race and ethnicity							
American Indian Asian/Pacific	1%	1%	1%	1%	0%	1%	
Islander	6%	8%	8%	6%	6%	6%	
Black	13%	14%	14%	15%	16%	17%	
Hispanic	13%	13%	12%	21%	22%	22%	
White	59%	60%	61%	50%	51%	51%	
Two or more	3%	4%	4%	3%	4%	3%	
Unknown	5%			5%			
Attendance status							
Full-time	76%	82%	80%	41%	66%	63%	
Part-time	24%	18%	20%	59%	34%	37%	

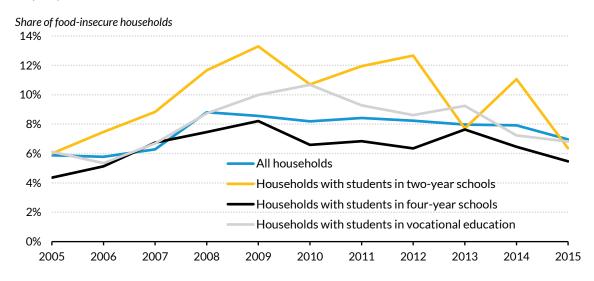
Source: Urban Institute analysis of data from the Integrated Postsecondary Education Data System (IPEDS) and the 2013 October and December CPS Supplements.

Note: All IPEDS counts are of the enrollment of both degree- and certificate-seeking and nondegree- and noncertificate-seeking undergraduates, as measured at the institution's official fall reporting date or October 15. We define a four-year school as an IPEDS institution offering programs of four or more years and a two-year school as an IPEDS institution offering programs of at least two but less than four years. On the CPS, respondents report if their attendance is at a two-year college (community or junior college) or a four-year college or university. When reporting to IPEDS, institutions classify undergraduate students as part-time if they are enrolled for either less than 12 semester or quarter credits or less than 24 contact hours a week each term. The CPS asks respondents to self-report if attendance is full-time or part-time, without asking about credit or contact hours. Estimates are weighted using the person-level supplement weight (wtsupp). For undergraduates of four-year schools, CPS October n = 3,813; CPS October and December n = 1,307; for undergraduates from two-year schools, CPS October n = 1,802; CPS October and December n = 647.

FIGURE A1

Food Insecurity among Households with College Students, 2005-15

Thirty-day measure



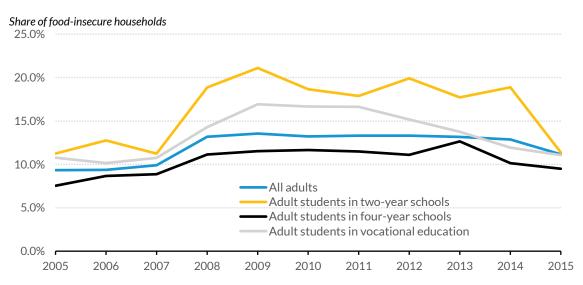
Source: Urban Institute analysis of data from the October and December CPS Supplements.

Note: The 30-day measure is unavailable before 2005. Estimates are weighted using household-level food security status weight (fshwtscale).

FIGURE A2

Food Insecurity among Individual College Students, 2005–15

Twelve-month measure



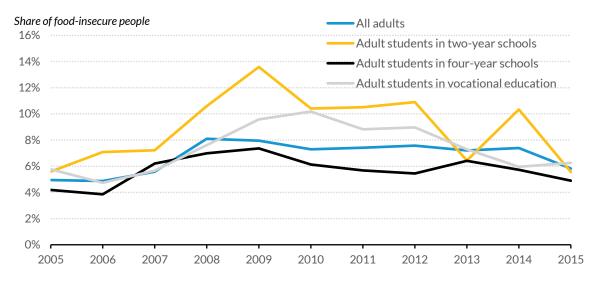
Source: Urban Institute analysis of data from the October and December CPS Supplements. **Note:** The individual measure is unavailable before 2005. Estimates are weighted using the person-level supplement weight (wtsupp).

ASSESSING STUDENT FOOD INSECURITY ON CAMPUS

FIGURE A3

Food Insecurity among Individual College Students, 2005–14

Thirty-day measure



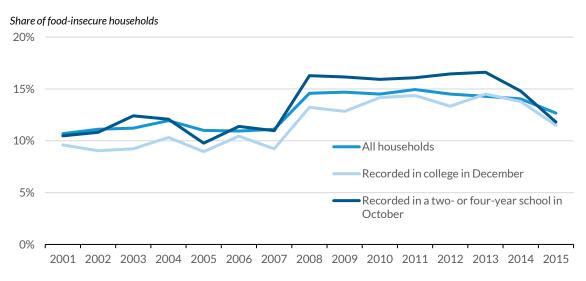
Source: Urban Institute analysis of data from the October and December CPS Supplements.

Note: The individual, 30-day measure is unavailable before 2005. Estimates are weighted using the person-level supplement weight (wtsupp).

FIGURE A4

Food Insecurity among Households with College Students, 2005–14

Twelve-month measure, December check



Source: Urban Institute analysis of data from the October and December CPS Supplements.

Note: From 2001 to 2012, the variable for enrollment in college in December is only reported for individuals who are age 16 to 24. From 2013 onward, this variable is reported for individuals age 16 to 54. Estimates are weighted using household-level food security status weight (fshwtscale).

Notes

- 1. Since 2005, CPS also records a second measure of food insecurity for all households, estimating food security conditions in the 30 days prior to the survey administration. We present our findings from this short-term measure in appendix A, figure A1.
- 2. We accomplish this individual-level link, by survey year, by using the longitudinal CPSID and CPSIDP variables developed by the IPUMS-CPS project at the Minnesota Population Center (Drew, Flood, and Warren 2014; Flood et al. 2015). The CPS uses a sample rotation system in which a household is interviewed for four consecutive months, not interviewed for the following eight months, and then interviewed for another four months (US Census Bureau 2006). CPS month-over-month response rates are high. Without any attrition, we would expect 50 percent of households in the October sample to appear in our December sample. In the actual data, we retain 38.1 to 44.1 percent of the weighted households in our sample over the two months (equivalent to a response rate of about 76-88 percent). We do not observe any statistically significant differential attrition from the sample based on the presence of two-year or four-year students. We observe that, in about half of the years between 2001 and 2015, households with vocational education students are more likely to be retained in the sample relative to households who do not have vocational education students from the Integrated Postsecondary Education Data System (IPEDS) to the full October Supplement and the students that were resampled in December is available in appendix A, table A1.
- 3. There is some overlap between students who are recorded as being in vocational education and those in twoor four-year colleges. Across the years of our sample, 9 to 15 percent of individuals who report they are in vocational training also reported enrollment in a two-year college, and 10 to 15 percent report enrollment in a four-year college.
- 4. Students who are enrolled in graduate school or who do not have a recorded enrollment level are not categorized as college students.
- 5. The CPS samples students in dormitories, and when they are interviewed they are asked to report on their permanent residence rather than their dormitory address. This difference should not affect results at the national level (US Census Bureau 2006).
- 6. We present individual-level estimates of 12-month and 30-day food insecurity, respectively, in appendix A, figures A2 and A3.
- 7. There was a spike in food insecurity during the Great Recession, and at the same time the characteristics of enrolled students changed because many individuals who lost jobs responded by enrolling in school. An Oaxaca decomposition shows that changes in characteristics of enrolled students explain only 17 percent of the increase in food insecurity among two-year students and 30 percent among four-year and vocational students.

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About the Authors

Kristin Blagg is a research associate in the Education Policy Program at the Urban Institute. Her research focuses on K–12 and postsecondary education. Blagg has conducted studies on student transportation and school choice, student loans, and the role of information in higher education. Blagg spent four years as a math teacher in New Orleans and New York City. In addition to her work at Urban, she is pursuing a PhD in public policy and public administration at the George Washington University. Blagg holds a BA in government from Harvard University, an MSEd from Hunter College, and an MPP from Georgetown University.

Craig Gundersen is the Soybean Industry Endowed Professor in Agricultural Strategy in the Department of Agricultural and Consumer Economics at the University of Illinois, is on the Technical Advisory Group for Feeding America, is the lead researcher on Feeding America's Map the Meal Gap project, and is the managing editor for *Applied Economic Perspectives and Policy*. He is also a round table member of the Farm Foundation, a nonresident senior fellow at the Chicago Council on Global Affairs, and a faculty affiliate of the Wilson Sheehan Lab for Economic Opportunities at the University of Notre Dame. His research concentrates on the causes and consequences of food insecurity and on the evaluation of food assistance programs, with an emphasis on SNAP.

Diane Whitmore Schanzenbach is the director of The Hamilton Project and a senior fellow at the Brookings Institution. She is currently on leave from her position as a professor in the School of Education and Social Policy at Northwestern University. She is also a research associate at the National Bureau of Economic Research and a research affiliate of the Institute for Research on Poverty.

James P. Ziliak holds the Carol Martin Gatton Endowed Chair in Microeconomics in the Department of Economics and is founding director of the Center for Poverty Research and the Kentucky Federal Statistical Research Data Center at the University of Kentucky. He has held visiting positions at the Brookings Institution, Russell Sage Foundation, University College London, University of Michigan, and University of Wisconsin. He has edited or coedited several volumes, including *Welfare Reform and Its Long-Term Consequences for America's Poor* (Cambridge University Press, 2009), *Appalachian Legacy: Economic Opportunity after the War on Poverty* (Brookings Institution Press, 2012), and SNAP Matters: How Food Stamps Affect Health and Well Being (Stanford University Press, 2015).

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2100 M Street NW Washington, DC 20037

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