

BRIEFING PAPER

Stuck on the Bottom Rung of the Wage Ladder

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Summary

Pennsylvania lawmakers are currently considering whether to increase the state's minimum hourly wage. In this debate, one question concerns whether the earnings of workers at the low end of the job market will increase even without a higher minimum wage. The National Federation of Independent Business claims, for example, that 63% of minimum-wage workers receive wage increases after one year, and therefore a minimum wage increase is unnecessary. (See Box 1 for a discussion of this claim.)

While previous studies of the upward mobility of low-wage workers have relied on economic data for the United States as a whole, this Briefing Paper uses official government data for Pennsylvania alone. The dataset examined includes annual (not hourly) earnings for individuals in 1998 and again in 2004. In the starting year of 1998, earners are grouped into three categories: below-poverty-level earners, earners from the poverty level up to 1.5 times the poverty level, and earners from 1.5 up to 2 times the poverty level.

We focus most attention in the text on below-poverty-level earners because this group consists most heavily of near-minimum-wage workers. In this below-poverty-level group, a full-time, full-year worker earned less than \$5.40 per hour in 1998 and less than \$6.26 per hour in 2004. We also discuss in the text the group earning at least the poverty level but less than 1.5 times the poverty level. (Full-time, full-year workers in this second group earned at least \$5.40 per hour in 1998 but less than \$8.10 per hour; they earned at least \$6.26 per hour in 2004 but less than \$9.39.)

Our analysis shows that mobility out of low-earning jobs is limited. Among the 670,000 individuals who started out with below-poverty-level earnings in 1998 and worked substantially in Pennsylvania in 2004, we find that

- **261,000 – about two in five – still had below-poverty-level earnings in 2004** (i.e., \$6.26 per hour for a full-time, full-year worker);
- **245,000, another nearly two in five, had earnings in 2004 of at least one but less than two times the poverty level** and thus below what economists consider a “self-sufficiency” income – i.e., an income high enough to pay for a basic needs budget without public assistance.

We find, further, that, of 1.8 million Pennsylvania workers with annual earnings of less than 150% of the poverty level in 1998, **nearly three-quarters (72%) were either still earning less than 150% of the poverty line in 2004 or were out of the sample** (i.e., they worked very little in 2004 or had left Pennsylvania).

These statistics paint a less rosy picture than the reassuring anecdotes about upward mobility told by opponents of a minimum wage increase. For large numbers of Pennsylvania's low-wage earners, substantially higher earnings will not result quickly or automatically from the workings of the job market.

Data and Methodology

Keystone Research Center's (KRC's) *State of Working Pennsylvania 2005* documented that, adjusted for inflation, typical low-wage Pennsylvania workers earned slightly less in 2004 (\$7.16 per hour) than they did in 2001 (\$7.31 per hour) and 1979 (\$7.23 per hour).¹ (All dollar figures in the previous sentence are in 2004 dollars.) While these statistics show that workers in the aggregate have not done well at the low end of the Pennsylvania job market, they do not track particular workers over time.

Box 1. Overstated Claims About the Upward Mobility of Minimum-wage Workers

One estimate cited by opponents of a minimum wage increase is that the wages of 63% of minimum wage earners increase after one year. This estimate is rounded up to "two thirds" by Kevin Shivers of the National Federation of Independent Business.* This claim appears to come from a widely cited 1992 article by Ralph Smith and Bruce Vavrichek, which used U.S. data from the mid-1980s.**

Smith and Vavrichek made two methodological choices that tend to increase the 63% figure.

- First, Smith and Vavrichek focus on workers earning right at the minimum wage. This means that an increase of as little as a penny after one year moves workers into the group that experiences an "increase." Moreover, while the average increase received by minimum wage workers was nearly 20 percent, with a \$3.35 minimum wage in the mid-1980s, 20 percent amounts to only 67 cents.
- Second, the authors do not adjust for inflation. Therefore workers who experience an increase in hourly wages that does not compensate for inflation still fall into the group that experiences a wage increase. Adding the 16 percent of workers who received increases from \$3.35 to \$3.50 to the 37 percent who received no increase, Smith and Vavrichek themselves note the "sobering" finding that "over half of the minimum wage workers employed a year later received an hourly wage rate that either did not keep pace with inflation or just barely did so."

In sum, Smith and Vavrichek's research does not support the claim that nearly two-thirds of minimum wage workers experience a meaningful or inflation-adjusted increase in wages after one year.

A final reason not to rely at this juncture on the Smith and Vavrichek estimate is that these authors rely on old data. More recent data from the same underlying source (the Panel Study of Income Dynamics), spanning 1992 to 2003, has been examined recently by Heather Boushey (see Box 2).

* Jodi Paladino, a small-business owner and chairman of the Pennsylvania Leadership Council of the National Federation of Independent Business (NFIB), wrote recently, "For most small business owners, the minimum wage is a starting or training wage. These jobs allow Pennsylvanians to establish work records opening doors to better-paying jobs. Sixty-three percent of minimum wage earners see their wages increase after one year." (See Jodi Paladino, "Pay now or later," *The Patriot News*, September 18, 2005.) Kevin Shivers, also of the NFIB, wrote, "Most small-business owners use the minimum wage as a starting or training wage. ... These jobs allow Pennsylvanians to establish work records, opening doors to better-paying jobs. That's why two-thirds of all minimum wage earners see their wages increase after one year." (See Kevin Shivers, "Raising the minimum wage hurts," *Meadville Tribune*, December 30, 2005; online at http://www.meadvilletribune.com/statenews/cnhinsall_story_364153415.html.)

** Ralph E. Smith and Bruce Vavrichek, "The Wage Mobility of Minimum Wage Workers," *Industrial and Labor Relations Review*, October 1992, pp. 82-88.

Two recent studies that use national data have tracked the same workers over time. These studies found that a substantial share of adult low-wage workers remain stuck at the bottom of the wage distribution (see Box 2). This Briefing Paper uses Pennsylvania Department of Labor and Industry (PDL&I) data to follow the experience of individual workers in the commonwealth. The data is collected from employers through the Quarterly Covered Employment and Wages Program. For each worker earnings are reported quarterly along with an indicator stating how many weeks the individual worked in the quarter. (While the underlying data on individual workers is inaccessible to outside researchers for confidentiality reasons, KRC requested that PDL&I extract the specific information reported here.)

The data extracted for KRC contain information on 2.44 million Pennsylvania workers who earned less than 200% of the federal poverty level for a family of three in 1998. (The data source does not contain information on hourly earnings or on hours worked.) To be included in the sample, workers had to have earned \$50 or more dollars in at least 17 weeks. The Pennsylvania annual earnings of these same workers were then examined in 2004, again imposing the requirement that workers had to have earned at least \$50 in 17 weeks to be included in the sample. The sample in 2004 shrinks to 1.53 million, with 912,000 workers (37% of the total) dropping out because they did not earn \$50 or more dollars in at least 17 weeks or because they left Pennsylvania.

Table 1 summarizes the demographic characteristics of our sample of 1.53 million workers in 2004, along with the industries in which those workers were employed.² In 1998, 95% of the workers in the sample of 1.53 million were at least 19 years old.³ (To see this, subtract six years from the age ranges in the table to obtain “Age (as of 1998).”)

We break our 1998 sample into three groups based on workers’ annual earnings relative to the poverty level for a family of three. This poverty level equaled \$11,235 in 1998 and \$13,020 in 2004. For a full-time employee who works 2080 hours in a year, these annual earnings translate into \$5.40 per hour in 1998 and \$6.26 per hour in 2004.⁴

1. **Less than 100% poverty-level earnings:** workers with annual earnings below the poverty level in 1998 (up to \$5.40 per hour in 1998 dollars for a full-time, full-year worker);
2. **100% up to 150% poverty-level earnings:** workers with annual earnings of \$11,235 up to \$16,853 in 1998 (\$5.40 up to \$8.10 per hour in 1998 dollars for a full-time, full-year worker);
3. **150% up to 200% poverty-level earnings:** includes workers with annual earnings of \$16,853 to \$22,470 (\$8.10 to \$10.80 per hour in 1998 dollars).

(Note that poverty levels are adjusted each year by the rate of inflation. Therefore, the inflation-adjusted poverty level in 1998 and 2004 are the same; i.e., in 2004 dollars, the 1998 poverty level equaled \$13,020 or \$6.26 per hour for a full-time, full-year worker.)

To measure workers’ economic progress by 2004, we break annual earnings in 2004 into six categories:

1. Less than 100% poverty-level earnings
2. 100% up to 150% poverty-level earnings
3. 150% up to 200% poverty-level earnings

Table 1. Demographic Profile of Pennsylvanians Earning Below 200% of the Poverty Level in 1998* Who Worked Substantially in Pennsylvania in 2004**

<i>Demographic Characteristic</i>	<i>Share of Sample (percent)</i>
Gender	
Male	46%
Female	54%
Age (as of 2004)	
16-20	0%
21-24	5%
25-34	32%
35-44	27%
45-54	22%
55-64	11%
65+	3%
Race	
American Indian	0%
Black	12%
Hispanic	3%
Pacific Islander	1%
White	84%
Industry (as of 2004)	
Construction	8%
Mining	0%
Agriculture, forestry, fishing, and hunting	0%
Durable Goods	4%
Nondurable Goods	14%
Wholesale Trade	4%
Retail Trade	13%
Transportation and Utilities	5%
Information	2%
Financial Activities	5%
Professional and Business Services	12%
Education and Health Services	18%
Leisure and Hospitality	9%
Other Services	3%
Government	3%
Nonclassifiable	1%

*Individuals must have earned less than \$22,470 in 1998.

**Individuals must have earned \$50 or more in at least 17 weeks in 1998 and 2004.

Source: Pennsylvania Department of Labor and Industry (PDL&I), Quarterly Covered Employment and Wages (QCEW) program

Box 2. What Previous Research Has Shown About Moving Up From Minimum-Wage Jobs

Recent research on the United States labor market as a whole finds limited upward mobility from minimum-wage jobs. In an article published in December 2005, Heather Boushey tracked prime-age adults (age 25 to 54) during four different three-year periods (1992 to 1994, 1993 to 1995, 1996 to 1998, and 2001 to 2003).^{*} Boushey found that

- more than a third (37%) of prime-age adults in jobs paying within a dollar of the 1997 minimum wage of \$5.15 remain in jobs paying this amount or less (adjusted for inflation) three years later;
- another 24% of workers are not employed three years later;
- thus, only 39% of workers have moved up to jobs paying more than a dollar above the minimum wage.

A 2001 study, using data for the 1979 to 1994 period, tracks workers who had “permanently” left school after completing high school or college.^{**} Upon leaving school, most workers quickly move into wages well above the minimum wage. Many workers who start earning close to the minimum wage, however, spend a substantial amount of their career in minimum-wage jobs:

- 73% of workers earn within \$2 of the minimum wage in the first year of their career and 37% still earn within \$2 of the minimum wage in year five. (This study does not adjust wages for inflation over time. If it did, a larger share of workers would still be earning within \$2 of the minimum wage in each year.)
- 20% of workers still earn within \$2 of the minimum wage in the 10th year of their career.

^{*} Heather Boushey, “No Way Out: How Prime-Age Workers Get Trapped in Minimum-Wage Jobs,” *Working USA: The Journal of Labor and Society*, Volume 8, December 2005, pp. 659-670.

^{**} William J. Carrington and Bruce C. Fallick, “Do Some Workers Have Minimum Wage Careers?” *Monthly Labour Review*, May 2001, pp. 17-27.

4. 200% up to 300% poverty-level earnings
5. 300% up to 400% poverty-level earnings
6. 400% poverty-level earnings and above

For simplicity, in the text, the last three categories are ordinarily grouped as twice the poverty level and above.

While workers in the second and third groups above earn the poverty level or above – all the way up to 200% of the poverty level – these workers remain low-income. Budget studies of the actual cost of basic necessities (food, rent, transportation, and so on) show that a “self-sufficiency” income that covers these necessities without public assistance is about 200% of the poverty level.⁵ Any worker with annual earnings still below 200% of poverty earnings in 2004 (\$26,040 in 2004 dollars or \$12.52 per hour for a full-time, full-year worker) remains relatively low-income.

In the context of the debate over the Pennsylvania minimum wage, the findings section that follows focuses most attention on the two lowest-wage 1998 groups (i.e., on workers originally earning less than \$16,853 annually). For workers employed full-time all year, these two groups contain workers who started out within three dollars of the minimum wage (up to \$8.10 per hour).

Findings

Table 2 presents the labor market status and annual earnings of our three groups of 1998 Pennsylvania workers six years later. Table 3 removes those who left the sample by 2004 (i.e., they did not meet the requirement of earning \$50 or more in at least 17 weeks in 2004). Thus Table 3 shows, of those who remained in the sample, what share ended up in 2004 within each annual earnings category.

Focusing first on all 1.2 million workers in 1998 in the below-poverty-level earnings group (first column of percentages in Table 2), we find that, by 2004,

- two-thirds of the original sample (66 percent) is either out of the sample or still in the below-poverty-level earnings group;
- only 14% of the original sample reaches annual earnings of more than twice the poverty level (\$26,040) in 2004.

Now looking at the distribution of annual earnings for the 670,000 individuals with below-poverty-level earnings in 1998 who are still in the sample in 2004, we find that (Figure 1 and Table 3, the first column of percentages)

- 39% still have below-poverty level earnings ;
- another 37% have earnings above the poverty level but less than two times the poverty level and hence below what is commonly seen as a self-sufficiency income;
- 16% have annual earnings from 200 up to 300 percent of poverty (in the \$26,040 to \$39,060 range);
- only 9% climbed to annual earnings levels at or above 300 percent of the poverty level (\$39,060).

We turn now to the mobility experience of the group earning at least 100% of the poverty level in 1998 up to 150% of the poverty level. In this group, as noted, full-time, full-year workers began the period with hourly wages from \$5.40 to \$8.10 (compared to the minimum wage of \$5.15). In 2004, among the 630,000 individuals in the sample in 1998, we find (Table 2, column 2) that

- 63% either (a) earn at or below the original earnings level or (b) are out of the sample because they did not earn \$50 or more in Pennsylvania in at least 17 weeks;
- only 21% reach annual earnings of over twice the poverty level (\$26,040) in 2004.

Table 2. Labor Market Status and Annual Earnings in 2004 of Pennsylvania Workers Who Had Annual Earnings Below 200% of the Poverty Level in 1998

	<i>Number of Individuals (thousands)</i>			
	1,195	630	618	2,443
	1998 Annual Earnings			
2004 Labor Market Status and Annual Earnings	<i>< 100% Poverty</i>	<i>>=100% and < 150% Poverty</i>	<i>>=150% and < 200% Poverty</i>	<i>All</i>
<i>Out of the Pennsylvania Labor Force*</i>	44%	34%	28%	37%
<i>< 100% Poverty (\$13,020)</i>	22%	12%	7%	16%
<i>>= 100% and < 150% (>= \$13,020 and < \$19,530)</i>	12%	17%	9%	12%
<i>>= 150% and < 200% (>= \$19,530 and < \$26,040)</i>	9%	16%	19%	13%
<i>>= 200% (>= \$26,040)</i>	14%	21%	37%	21%
<i>>= 200% and < 300% (>= \$26,040 and < \$39,060)</i>	9%	15%	27%	15%
<i>>= 300% and < 400% (>= \$39,060 and < \$52,080)</i>	3%	4%	7%	4%
<i>>= 400% (>= \$52,080)</i>	2%	2%	3%	2%

*Defined here as not having earned \$50 or more dollars in at least 17 weeks.

Source: PDL&I QCEW program

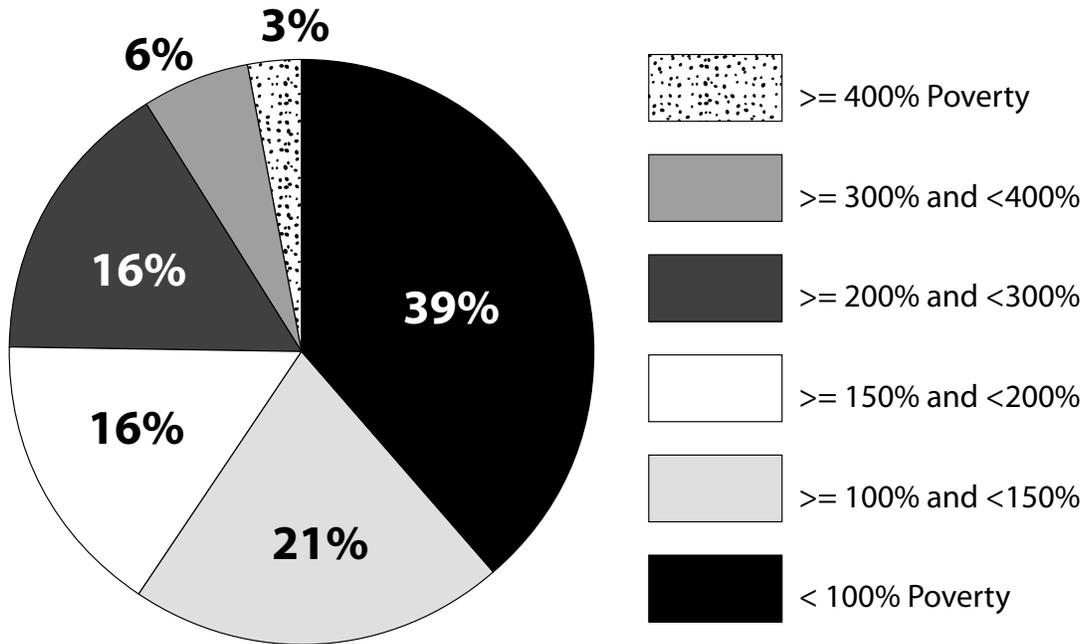
Table 3. Annual Earnings in 2004 of Pennsylvania Workers Who Had Annual Earnings Below 200% of the Poverty Level in 1998 (percentage of those still in the Pennsylvania labor force in 2004* in each annual earnings category)

2004 Annual Earnings	1998 Annual Earnings			
	<i>< 100% Poverty</i>	<i>>= 100% and < 150% Poverty</i>	<i>>= 150% and < 200% Poverty</i>	<i>All</i>
<i>< 100% Poverty (\$13,020)</i>	39%	19%	10%	25%
<i>>= 100% and < 150% (>= \$13,020 and < \$19,530)</i>	21%	25%	12%	20%
<i>>= 150% and < 200% (>= \$19,530 and < \$26,040)</i>	16%	25%	27%	21%
<i>>= 200% (>= \$26,040)</i>	24%	32%	51%	34%
<i>>= 200% and < 300% (>= \$26,040 and < \$39,060)</i>	16%	22%	37%	24%
<i>>= 300% and < 400% (>= \$39,060 and < \$52,080)</i>	6%	6%	9%	7%
<i>>= 400% (>= \$52,080)</i>	3%	3%	5%	3%

*Defined here as not having earned \$50 or more dollars in at least 17 weeks.

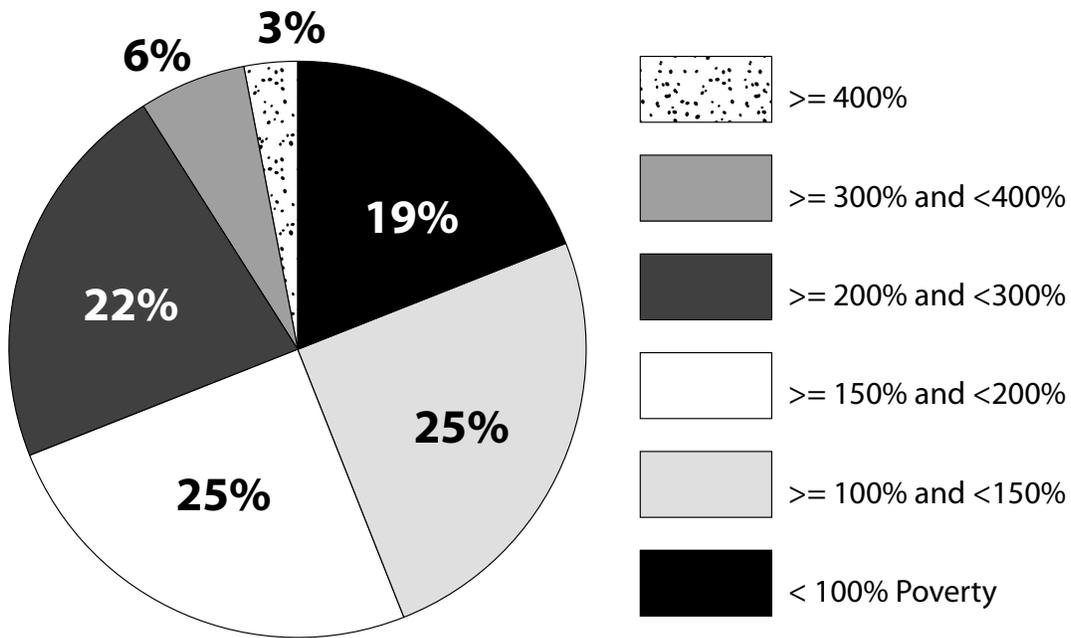
Source: PDL&I QCEW program

Figure 1. Annual Earnings in 2004 for Individuals Making Less than the Federal Poverty Level in 1998



Source: Table 3, column 1.

Figure 2. Annual Earnings in 2004 for Individuals Making at Least the Poverty Level but Less than 150% of the Federal Poverty Level in 1998



Source: Table 3, column 2.

Restricting our sample (of those earning at least 100% of the poverty level in 1998 up to 150% of the poverty level) to the subset (some 418,000 people) still working substantially in Pennsylvania in 2004, we find that (Figure 2 and Table 3, column 2):

- slightly over two-thirds still have annual earnings below 200% of the poverty level, the standard proxy for a self-sufficiency income:
 - o 44% remain at or below the original annual earnings level of 100% up to 150% of the poverty level;
 - o another 25% have annual earnings of at least 150% of the poverty level but less than 200%;
- 22% have annual earnings that fall in the \$26,040 to \$39,060 range (from 200 percent up to 300 percent of the poverty level);
- only 9% climbed to annual earnings at or above 300 percent of the poverty level (\$39,060).

Conclusion

In today's job market, the evidence above demonstrates, many Pennsylvania workers are stuck at low annual earnings levels.

The facts presented contradict the claim that workers do not need a higher minimum wage to increase their earnings. Many workers not only would benefit from such an increase but will not get meaningful earnings increases without a higher minimum wage.

Endnotes

¹ These statistics refer to workers at the 10th percentile of the job market who make more than 10% of workers and less than the other 90%.

² The demographic characteristics of the 912,000 workers in the 1998 sample but not in the 2004 sample (because they did not earn \$50 or more in at least 17 weeks in Pennsylvania in 2004) are very similar to the demographic characteristics of the 1.53 million workers still in the sample in 2004.

³ For the 37% that dropped out of the sample between 1998 and 2004, we do not know what share left Pennsylvania. We also do not know, for individuals who did leave and worked in another state, their annual earnings. Boushey, however, (see Endnote 5) found that 24% of workers in low-wage jobs were not employed three years later. This suggests that half to two-thirds of the 37% that dropped out of the PDL&I sample may not be employed at meaningful levels in Pennsylvania or elsewhere. If this inference is correct, the 2004 earnings profile of the entire original sample of 2.44 million Pennsylvania workers earning less than twice the poverty level for a family of three in 1998 would look worse than the earnings profile, presented in the text, of the 1.53 million who did work substantially in Pennsylvania in 2004.

⁴ While the source used for this Briefing Paper does not permit us to examine hourly earnings within each of our

annual earnings ranges, the Current Population Survey (CPS) March supplement does permit such analysis. In 2004, preliminary analysis of the CPS March supplement reveals that 58 percent of workers with annual earnings of less than the poverty level for a family of three (\$13,020) have hourly wages of \$8.14 less. Another 26 percent of workers with annual earnings of less than the poverty level have hourly earnings of \$11.14 or less. In addition, over 80 percent of workers with hourly wages of less than \$8.14 have annual earnings of less than 1.5 times the poverty level for a family of three.

⁵ Heather Boushey, Chauna Brocht, Bethney Gundersen, and Jared Bernstein, [Hardships in America: The Real Story of Working Families](#) (Washington, D.C.: Economic Policy Institute, July 2001).

The Keystone Research Center

The Keystone Research Center (KRC) was founded in 1996 to broaden public discussion on strategies to achieve a more prosperous and equitable Pennsylvania economy. Since its creation, KRC has become a leading source of independent analysis of Pennsylvania's economy and public policy.

The Keystone Research Center is located at 412 North Third Street, Harrisburg, Pennsylvania, 17101. Most of KRC's original research is available from the KRC Web site at [**www.keystoneresearch.org**](http://www.keystoneresearch.org). The Keystone Research Center welcomes questions or other inquiries about its work at 717-255-7181, or toll free at 888-618-2055.