

## MISSOURI 4-H AND THE 4-H STUDY OF POSITIVE YOUTH DEVELOPMENT

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In 2007, Missouri 4-H joined the national 4-H Study of Positive Youth Development. Funded by National 4-H Council and lead by researchers at Tufts University, this longitudinal study began with fifth graders. By the end of 2007, data has been collected from 4,793 adolescents in 34 states. Plans are to continue surveying these youth through high school and into college. Although funded by 4-H, the participants are diverse adolescents who may or may not be 4-H members.

The 4-H Study of Positive Youth Development is a landmark investigation, because of its size, sophisticated methodology, and the commitment to study adolescent development over a number of years. It is helping parents, educators, and researchers better understand the factors that lead to positive growth and decreased risk during adolescence. The study also examines the impact of “out of school” time activities such as 4-H.

Between March and August of 2007, 338 adolescents from Missouri participated in Wave 5 of the 4-H Study of Positive Youth Development. The students were from 21 sites in Missouri. (See Appendix A for sites.) 4-H Youth Development Specialists from the University of Missouri and Lincoln University recruited students in grades 5 to 11 to complete a written survey. Parents could also complete an optional survey. Since one of the Missouri sites was a residential facility for adjudicated adolescents (n=55), those young people are not included in the results reported here.

### **National Findings:**

Findings from the first four years of the national study can be found at: <http://www.fourhcouncil.edu/>.  
Key findings to date include:

- Positive Youth Development (PYD) is made up of the “Five Cs”: Competence, Confidence, Connection, Character, and Caring.
- When PYD is present, we can expect to find a sixth C: Contribution to self, family, and community.
- High PYD scores in earlier grades are good predictors in later grades of higher contribution and lower rates of unhealthy behaviors such as smoking, drinking, and bullying.

In addition, researchers are also studying the impact of 4-H participation. The large national sample of teens permits researchers to compare 4-H and non-4-H participants. The groups are matched on key factors such as gender, race/ethnicity, community type, number of parents in the home, family per capita income, and mother’s education. The matched groups are also similar in their level of participation in out-of-school time programs. All students in the matched samples participated at least two times per month in 4-H or a similar youth development program.

When compared at the time they were 8<sup>th</sup> graders, researchers found that 4-H participants had significantly higher scores on:

- Positive Youth Development
- Contribution
- Expecting to go to College
- Number of positive adult mentors

The longitudinal findings are also exciting. Using data from multiple years, researchers created models that show trajectories or patterns of change over time. They identified desirable, undesirable, and intermediate patterns. Then, they compared matched samples of youth. For youth who had participated in 4-H at some point during 5-8<sup>th</sup> grades, they found:

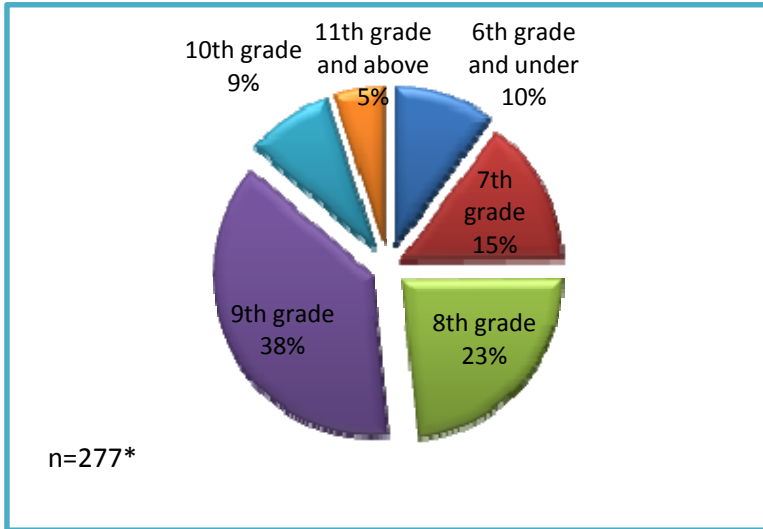
- 4-H Youth were 3.5 times more likely to be in the highest Contribution group
- 4-H Youth were 1.5 times more likely to be in the highest PYD group
- 4-H Youth were 1.3 times more likely to be in the lowest Risk Behavior and Depression groups.

Results from Wave 5 will be reported in fall 2008. This report will include longitudinal findings across Waves 1 to 5 (fifth grade through ninth grade).

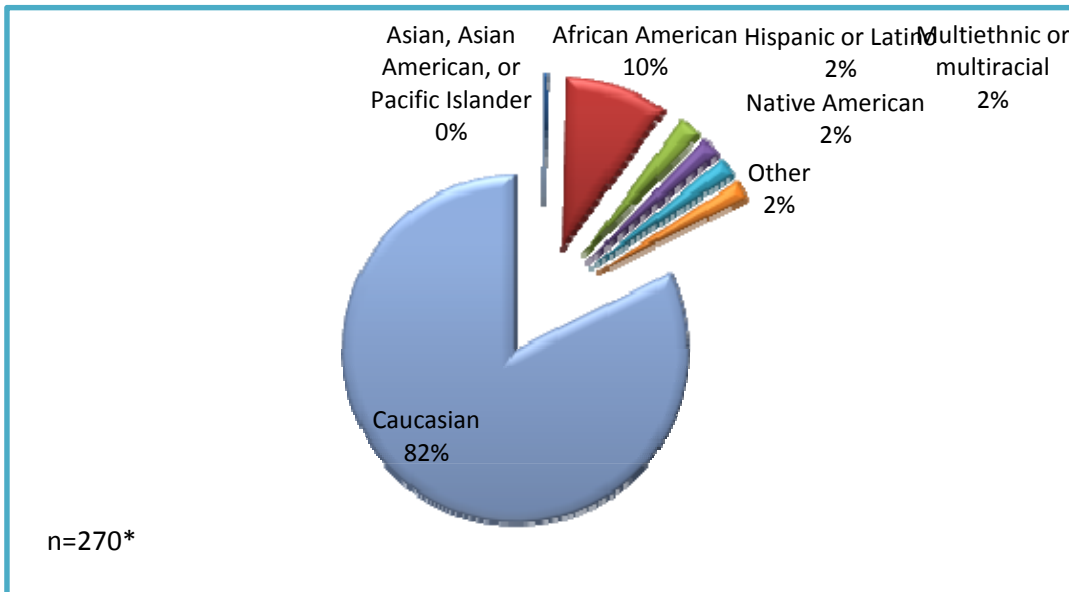
**Missouri Findings:**

Even though long-term results for Missouri youth are not yet available, the preliminary findings clearly compliment the national results. The Missouri data provide an interesting snap-shot of the participating Missouri youth. Graphs 1 and 2 show some of the characteristics of the Missouri students.

**Graph 1 Wave 5 Missouri Sample - Current Grade in School**



**Graph 2 Wave 5 Missouri Sample - Race or Ethnicity**



\* Some students skipped items or gave incomplete answers.

In addition to contributing to the national study, we particularly wanted to know about the value of Missouri 4-H participation. In order to explore this, we grouped Missouri students based on their self-reported 4-H participation in the past year. Groups were:

NON 4-H - Never participated in a 4-H club

SOME 4-H - Participated in a 4-H club less than once a month

ACTIVE 4-H- Participated in a 4-H club two or more times per month

Tables 2, 3 and 4 describe the three groups:

**Table 2 - Wave 5 Missouri Sample – Gender and 4-H Participation**

Gender	Non 4-H	Some 4-H	Active 4-H	Total
Male	34 (42.5%)	25 (40%)	33 (32%)	92 (37%)
Female	46 (57.5%)	38 (60%)	71 (68%)	155 (63%)
Total Sample	80	63	104	247**

**Table 3 – Wave 5 Missouri Sample – Grade Level and 4-H Participation**

Grade	Non 4-H	Some 4-H	Active 4-H	Total Sample
5 <sup>th</sup> grade	0	1 (2%)	0	1 (<1%)
6 <sup>th</sup> grade	7 (9%)	6 (9%)	9 (9%)	22 (9%)
7 <sup>th</sup> grade	5 (6%)	10 (16%)	22 (21%)	37 (15%)
8 <sup>th</sup> grade	19 (23%)	19 (30%)	23 (22%)	61 (24%)
9 <sup>th</sup> grade	42 (52%)	21 (33%)	28 (27%)	91 (37%)
10 <sup>th</sup> grade	3 (4%)	4 (6%)	15 (14%)	22 (9%)
11 <sup>th</sup> grade	4 (5%)	1 (2%)	6 (6%)	11 (4%)
Other	1 (1%)	1 (2%)	1 (1%)	3 (1%)
Total Sample	81	63	104	248**

**Table 4 – Wave 5 Missouri Sample – Race/Ethnicity and 4-H Participation**

Race/Ethnicity	Non 4-H	Some 4-H	Active 4-H	Total Sample
White, Caucasian, Not Hispanic	64 (80%)	50 (82%)	86 (84%)	200 (82%)
Black or African American	9 (11%)	5 (8%)	8 (8%)	22 (9%)
Asian, Asian American or Pacific Islander	0	1 (2%)	0	1 (<1%)
Hispanic or Latino	3 (4%)	1 (2%)	2 (2%)	6 (3%)
American Indian/Native American	3 (4%)	2 (3%)	0	5 (2%)
Multiethnic or multiracial	1 (1%)	1 (2%)	3 (2%)	5 (2%)
Other	0	1 (2%)	3 (2%)	4 (2%)
Total Sample	80	61	102	243**

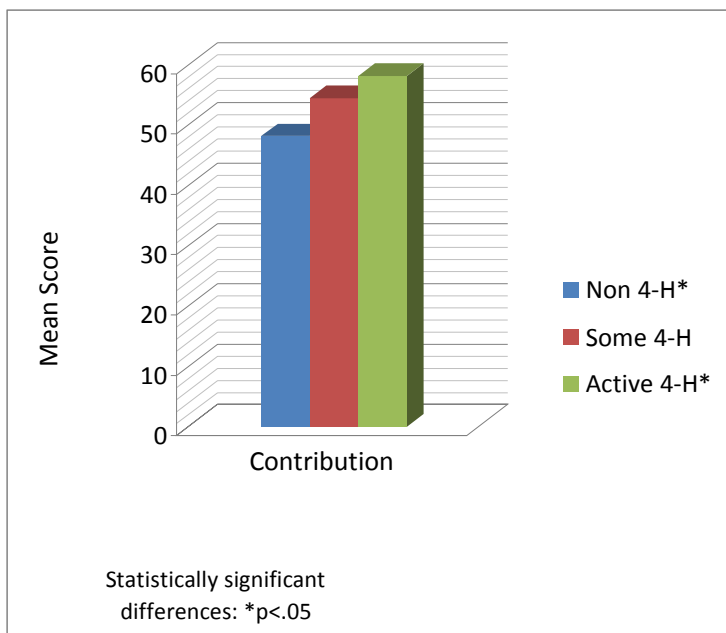
\*\* Some students skipped or gave incomplete answers on the questions on 4-H participation. Therefore, they could not be included in these analyses.

Then, we tested whether the average (mean) scores were statistically different for some of the factors measured in the 4-H Study. For Missouri students in Wave 5, we found significant differences between the NON 4-H and the ACTIVE 4-H groups on:

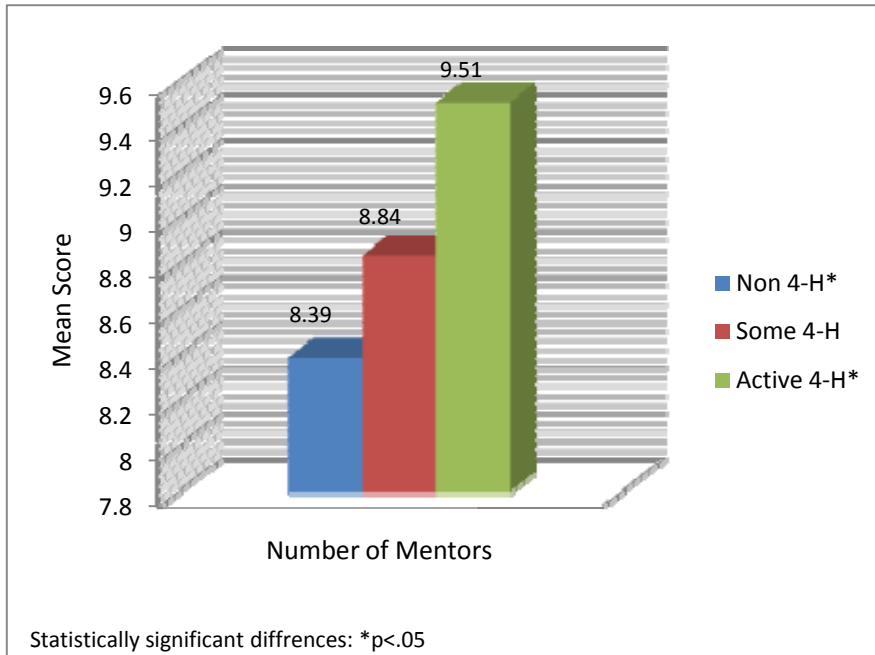
- Contribution—volunteering and service activities
- Number of Positive Adult Mentors
- Number of Leadership Experiences
- Reported Risk Behaviors—alcohol, tobacco use, and illicit drug use

The graphs 3, 4, 5 and 6 illustrate these differences.

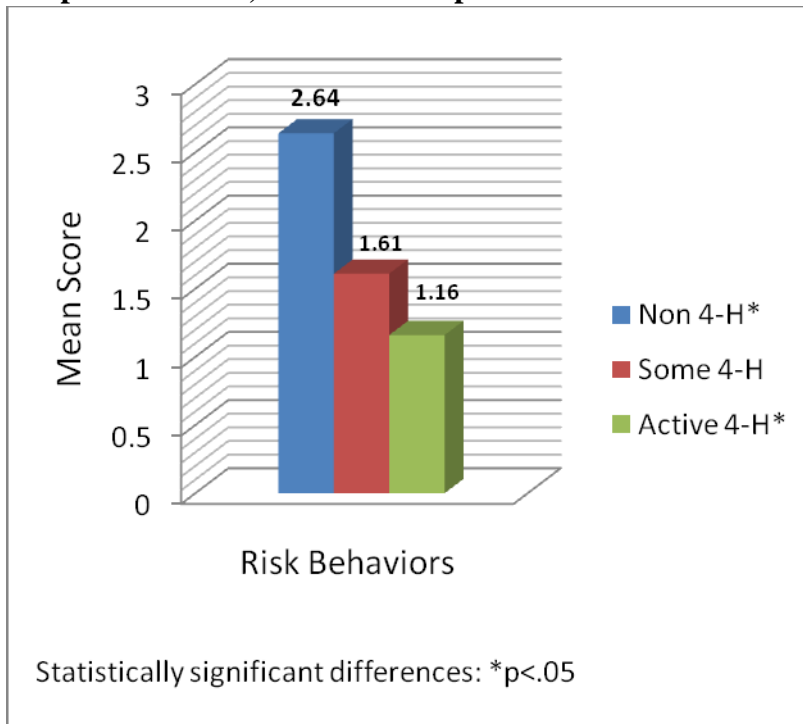
**Graph 3 - Wave 5, Missouri Sample - Contribution**



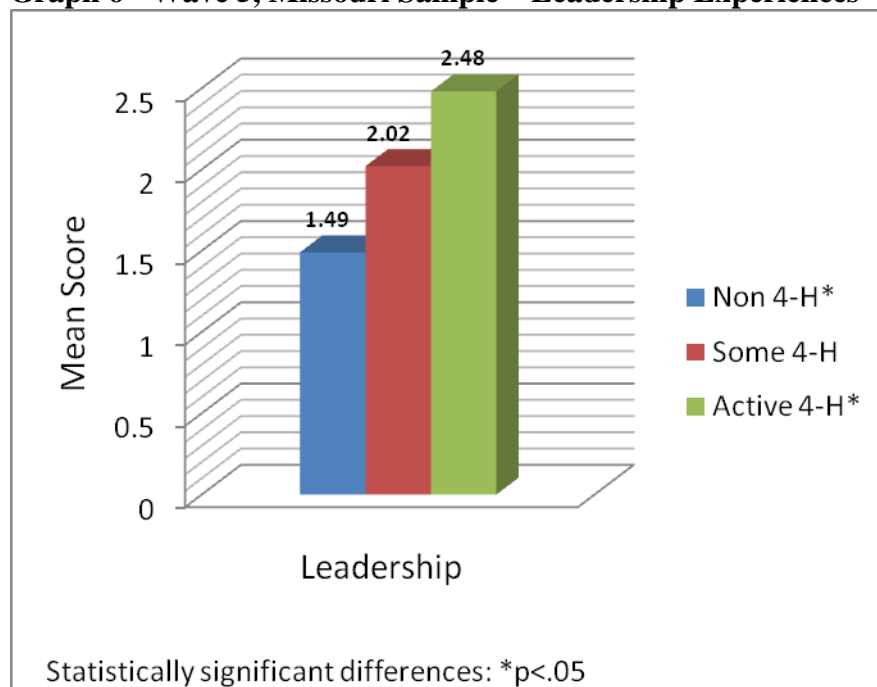
**Graph 4 - Wave 5, Missouri Sample - Number of Positive Adult Mentors**



**Graph 5 - Wave 5, Missouri Sample – Risk Behaviors**



**Graph 6 - Wave 5, Missouri Sample – Leadership Experiences**



These findings were consistent with the national sample and the longitudinal data. Both suggest that young people who are active in 4-H are likely to report more positive behaviors and fewer negative behaviors. Further analysis is planned.

### **Missouri Students and Attitudes Toward Science**

Missouri 4-H also added a set of questions to the study which examined young people's attitudes and interest in science, engineering and technology. Youth at 16 of the 21 Missouri sites participated. Those 214 youth included 126 4-H participants and 88 non-4-H participants. A researcher-designed, 20-item questionnaire was administered. Questions measured factors that have been shown to be related to students' attitudes toward science (George, 2000), including:

- Favorable attitudes toward science
- Favorable attitudes toward scientific careers
- Science self-concept
- Science activities
- Parent push or parent interest in science
- Science anxiety
- Peer science or peer interest in science

We found significant differences on three items including:

- 4-H participants were more likely to agree that science will be useful in my future.
- 4-H participants were more likely to say they spent out-of-school free time learning about or working with science and technology.

A complete report on this aspect of the Missouri 4-H Study of PYD can be found at <http://mo4h.missouri.edu/resources/evaluation/pydSETcharts.pdf>

## **Conclusions:**

While we were excited that Missouri findings were consistent with the national study, we must be careful in making comparisons. Most importantly, Missouri data is “cross-sectional,” rather than longitudinal. It only tells us about a sample of Missouri youth at one point in time. The most powerful national results are based on examining patterns of change over time. Second, the Missouri parent sample is too small to create matched samples of 4-H and non-4-H participants that parallel the national analysis. Since the parent data provide information on family income, parent education, and family structure, we cannot control for the influence of these important factors. Until we have sufficient parent data to replicate the national methodology, we will need to use caution in comparing results and making generalizations. We also need to re-survey Missouri youth in Waves 6, 7 and 8 to better understand patterns of change.

Nevertheless, we noted some differences between Missouri youth and the national sample that warrant further study and discussion. For example, in the national matched sample of 8<sup>th</sup> graders, 4-H’ers were significantly more likely to report that they expected to go to college. We did not find a similar difference between the non-4-H and 4-H groups in the Missouri sample. In another area, we found that more girls than boys in the Missouri Wave 5 sample are in the ACTIVE 4-H Group. We also noted that statewide means on certain items were different for Missouri youth as compared to the national sample in Wave 5. On the item asking “How often have you been bullied?” Missouri youth had an average score of 0.77 on a scale of zero to five. The national sample for Wave 5 had a notably lower average score of 0.39.

In all of these cases, we will do further analyses and research to try to understand the reasons for these differences. One goal will be to use this research to identify implications for parents, schools, and communities as we strive to provide the best environments for children and teens.

As we move forward, we endorse and echo these conclusions and recommendations from the National 4-H Study report:

“In its first few years, this first-of-a-kind longitudinal study has already yielded important information about how PYD can launch young people into healthy and productive lives. The findings have profound implications not only for the programs themselves, but also for public policy.

One of the things we have learned is that youth programs cannot remain static; they must expand and change so that they address the diverse and changing needs and interests of adolescents and their families. We also learned that youth programs must address both prevention and promotion; contrary to popular belief, focusing on one does not necessarily affect the other.

We are excited about the possibility of continuing this study through Grade 12 and beyond so that we can gather and analyze additional information to help the youth of today and tomorrow. By building upon and extending this longitudinal study, we will gain powerful and practical insights into what guides an adolescent into a productive and successful adulthood. We will also be able to determine which PYD assets are related to critical life events, such as completing high school, going to college, and successful entry into the workforce.

If we are able to extend the 4-H Study beyond the high school years, we will provide previously unavailable information about how youth development programs such as 4-H can move adolescents onto a productive and healthy adulthood, one benefiting both children and their communities. Such knowledge would be of inestimable value for science, for practitioners, and for developing effective social policy.” (page 19)

The authors conclude, “The true value of 4-H programs comes not from short-term results or event the effects over a few years. It comes from the programs’ influence on lifelong pathways of development (page 15).” We look forward to contributing to this significant and valuable work.

**References:**

Lerner, Richard M., Lerner, Jacqueline V., Phelps, Erin, and Colleagues. (2008) *The Positive Development of Youth: Report of the findings from the first four years of the 4-H Study of Positive Youth Development*. Tufts University Office of Publications, May 2008.

George, Rani. (2000) *Measuring Change in Students’ Attitudes Toward Science Over Time*. Retrieved from: <http://www.springerlink.com/content/r47qu08133663887/fulltext.pdf>