



## 2016 Dream It. Do It. Statewide Tour of Manufacturing Report

Led by



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In Fall 2016, through its Dream It. Do It. Minnesota program, 360 Manufacturing and Applied Engineering Center of Excellence and its partners helped coordinate 105 manufacturing businesses to provide 119 tours to students, families, and the general public. This event, the Dream It. Do It. Minnesota Statewide Tour of Manufacturing, took place from October 2-8, 2016, though tours taking place throughout the month were welcomed to allow schools and manufacturers greater opportunity to participate.

### Survey Methods

360 staff conducted two surveys, one surveying tour attendees and one surveying tour hosts to gather data on the impact of the Dream It. Do It. Minnesota Statewide Tour of Manufacturing.

#### *Tour Attendees*

Tour attendees received printed surveys that were mailed to tour hosts or schools. (Schools were asked if they could distribute the surveys to students.) The printed surveys were returned to 360 to be analyzed. Overall, 1,002 surveys were returned to 360. We believe this is because of 1) the number of students who were able to complete the surveys and 2) manufacturers received the surveys close to their actual tour date, making it more likely they distributed and returned the surveys. This is the highest response since 360 started surveying tour attendees, and is almost triple the response rate of 2015, which was 239 surveys.

#### *Tour Hosts*

Tour hosts were emailed an individualized link to complete a survey about their tour hosting experience. The survey was sent to 92 individuals; 38 respondents completed the full survey for a response rate of 41%. The number of people who were sent the survey is less than the number of tour hosts because not all the tour registrants included a contact at the manufacturer (e.g. a community tour coordinator may have organized and submitted tour information and only provided his/her contact information). The survey respondents were generally from greater Minnesota. Twenty-three manufacturers answered the question about who their primary audience was for their tour, with 48% saying schools (N=11), 9% saying community members (N=2), and 44% saying both (N=10).

## Key Findings

### Participant Survey Findings

From the participant surveys, we found that a vast majority of the respondents were students. Students accounted for 73% (N=726).

### Interest in STEM and Manufacturing

We continued to see increased interest in STEM (science, technology, engineering, and math) and manufacturing as well as increased awareness in manufacturing careers. From the survey:

- “A lot” of interest in STEM increased from 31% (N=301) pre-tour to 42% (N=408) to post-tour.
- “A lot” of interest in manufacturing careers increased from 22% (N=215) pre-tour to 32% (N=310) post-tour.
- “A lot” of awareness of careers in manufacturing increased from 28% (N=273) pre-tour to 49% (N=464) post-tour (rated “a lot”).

Both pre-tour and post-tour numbers for interest in STEM and manufacturing and awareness of careers in manufacturing are lower than 2015. This may be because there are more students who are part of the study than last year in the general findings. The tables below show the participant responses for their pre- and post-tour interest in STEM and manufacturing careers and awareness of manufacturing careers by groups in 2016 and the 2015 results.

Pre-tour responses

	<b>2016 Results (N=961-996)</b>	<b>2016 Results: Students (N=532)</b>	<b>2016 Results: Non-students (N=440)</b>	<b>2015 Results (N=210-220)</b>
<b>“A lot” interested in STEM</b>	31% (N=301)	25% (N=131)	39% (N=162)	55% (N=120)
<b>“A lot” interested in manufacturing careers</b>	22% (N=215)	16% (N=82)	31% (N=127)	30% (N=63)
<b>“A lot” of awareness of manufacturing careers</b>	28% (N=273)	24% (N=123)	35% (N=145)	33% (N=71)

Post-tour responses

	<b>2016 Results (N=952-971)</b>	<b>2016 Results: Students (N=532)</b>	<b>2016 Results: Non-students (N=440)</b>	<b>2015 Results (N=210-220)</b>
<b>Interest in STEM</b>	42% (N=408)	35% (N=183)	50% (N=212)	64% (N=136)
<b>Interest in manufacturing careers</b>	32% (N=310)	24% (N=127)	43% (N=173)	49% (N=101)
<b>Awareness of manufacturing careers</b>	49% (N=464)	42% (N=218)	57% (N=234)	60% (N=125)

The composition of the 2015 respondents is similar to the 2016 results of non-student respondents, mainly tour attendees who attended a general tour, not students on a school tour. There some differences, but overall, the findings are similar, suggesting that the student surveys impacted the overall results.

### Learning about the Tour

A majority of the participant respondents attended student tours, so it is not surprising 73% (N=726) of the participants answered they learned about the tour through school. When answers were sorted to include only

non-student respondents, school still remained the top answer at 48% (N=211), with newspaper at 19% (N=83), and family member of friend at 14% (N=63).

*Tour Host Survey Findings*  
**Attendance**

Based on reporting and estimates from the 38 respondents for the tour host survey, attendance ranged from 0 to 550, with an average of 134 people per site. How manufacturers gathered this data varied. Almost half (17) had sign-in or registration processes for visitors. Others counted groups (7), had tour lists (5), had set sizes for tour groups (1), made nametags (1), or did not have a process (5).

The total of reported attendees was 4,823. To find our estimated reach, we multiplied 134 (average number of attendees) by 105 (number of hosts) to find 14,070 estimated attendees.

**Manufacturers’ views on participation**

Manufacturers were asked about their experience with the tour. Overall, manufacturers seemed to find value in using the Statewide Tour to build awareness and promote manufacturing careers:

- 85% of hosts thought hosting a tour was worthwhile.
- 88% of hosts felt they had success engaging tour attendees.
- 85% of hosts thought there was value in using the tour to build interest in manufacturing careers.
- 91% of hosts would consider hosting again.

No respondent said they would not participate again, although three manufacturers were unsure.

The responses are overall similar, though occasionally lower, than last year’s, as seen in the tables below.

Tour participation worthwhile

	<b>Yes, certainly</b>	<b>Yes, maybe</b>	<b>No</b>	<b>Not sure</b>
<b>2015</b>	63% (N=30)	27% (N=13)	8% (N=4)	2% (N=1)
<b>2016</b>	44% (N=15)	41% (N=14)	9% (N=3)	6% (N=2)

Value in building awareness or interest in manufacturing careers

	<b>Very valuable</b>	<b>Somewhat valuable</b>
<b>2015</b>	69% (N=33)	19% (N=9)
<b>2016</b>	53% (N=18)	33% (N=11)

Engagement of Tour participants

	<b>Very successful</b>	<b>Somewhat successful</b>
<b>2015</b>	63% (N=30)	27% (N=13)
<b>2016</b>	68% (N=23)	21% (N=7)

Likelihood of participating again

	<b>Yes, certainly</b>	<b>Yes, maybe</b>	<b>No</b>	<b>Not sure</b>
<b>2015</b>	65% (N=31)	27% (N=13)	4% (N=2)	4% (N=2)
<b>2016</b>	62% (N=21)	29% (N=10)	0% (N=0)	9% (N=3)

**Hosting Tours Again**

We also wanted to understand if manufacturers repeat hosting a tour. We know various groups arrange their tours differently. Some are on a rotating schedule, and others repeat each year. To better understand who is returning to host, we asked manufacturers what years have they participated.

Year	If they participated in Statewide Tour
2012	21% (N=7)
2013	15% (N=5)
2014	38% (N=13)
2015	47% (N=16)
Other	29% (N=7)

(Could select more than one answer, so total may be more than 100%)

### Timing

There was concern that promoting the tour as a week-long event was too limiting to schedule tours (even though the materials do explain tours can take place at any time). To better understand manufacturers' preference, we included a question asking their preference. Of those who responded:

- 47% (N=16) preferred a week aligned with Minnesota Manufacturing Week and National Manufacturing Day.
- 8% (N=3) preferred the whole month of October.
- 41% (N=14) had no preference.

### Tour Support

Manufacturers were also asked about the support received from the Statewide Tour. When asked how helpful the provided toolkit was, manufacturers answered:

Very Helpful	3% (N=1)
Somewhat Helpful	65% (N=22)
Not helpful	21% (N=7)
Don't Know	12% (N=4)

When asked what materials they used, they answered:

Dream It. Do It. Tour Host Toolkit	35% (N=12)
Press release template	12% (N=4)
Tour promotional flyer	26% (N=9)
Tour poster	38% (N=13)
Public service announcement template	3% (N=1)
Radio ad template	9% (N=3)
Social media posts	12% (N=4)
Letter template for schools to send parents	12% (N=4)
Host a Tour flyer	21% (N=7)

(Could select multiple items; total may be more than 100%)

When asked what other support could be helpful, answers included continued funding for bussing and community tours and someone available to answer questions.

## Recommendations

Based on the survey data, the following are recommended for developing resources for manufacturers who host a tour and schools and how to promote the Statewide Tour:

### Resources

- Review Tour Toolkit based on feedback to see how manufacturers' concerns can be addressed. It may be helpful to better explain what the Statewide Tour organization can provide and what should be done locally.
- Develop an editable, electronically available template that can be used by local businesses to promote the tour but keep the Dream It. Do It. Minnesota branding.
- Develop a "how-to" organize a community tour resource. Work with some successful community tour organizers to develop content.
- Manufacturers were concerned about students not understanding how to act during the tour. Consider developing a resource for educators to help prepare students. Ideas include something to help manufacturers prepare for students or something for educators to prepare students for a tour? Ask industry and educators for input.

### Promotion

- Promote the tour dates to businesses earlier in the year.
- Look at how to increase promotion/work with local Chambers of Commerce to promote the tour.
- Continue to work with Minnesota Department of Employment and Economic Development and manufacturing associations to promote the tour.
- Continue to promote the tour to past hosts.
- Manufacturers seemed concerned that they were not receiving immediate applications for positions. When promoting the benefits of participating to manufacturers, consider focusing on how the Statewide Tour builds awareness and educates the community about modern manufacturing. Although some manufacturers may have immediate hires, participating in the Statewide Tour is a long-term investment.

## Data Tables

### Participant Survey

How did you hear about the Tour of Manufacturing?

Answer Choices	Responses
Chamber of Commerce	1.61% 16
Facebook	1.31% 13
Family member or friend	7.63% 76
Manufacturer	0.90% 9
Newspaper	9.54% 95
Radio	2.21% 22
School (e.g., fellow student or teacher)	72.89% 726
Signs or other marketing in town	1.61% 16
Tour of Manufacturing website	2.91% 29
Twitter	0.20% 2
Work (e.g., employer or another employee)	4.12% 41
Other (please specify)	5.22% 52
<b>Total Respondents: 996</b>	

*Note: Respondents could check all that apply.*

Overall, would you say that you are very satisfied, satisfied, dissatisfied, or very dissatisfied with your Tour of Manufacturing experience?

Answer Choices	Responses
Very satisfied.	49.45% 492
Satisfied.	46.83% 466
Dissatisfied.	3.02% 30
Very dissatisfied.	0.70% 7
<b>Total</b>	<b>995</b>



Think about BEFORE you attended the Tour of Manufacturing. How much were you...

	<b>A lot</b>	<b>Some</b>	<b>Very little</b>	<b>Not at all</b>	<b>Total</b>
Interested in science, technology, engineering, or math?	<b>30.94%</b> 301	<b>48.10%</b> 468	<b>15.01%</b> 146	<b>5.96%</b> 58	973
Interested in manufacturing careers?	<b>22.44%</b> 215	<b>41.75%</b> 400	<b>23.28%</b> 223	<b>12.53%</b> 120	958
Aware of careers in manufacturing?	<b>28.41%</b> 273	<b>44.43%</b> 427	<b>19.88%</b> 191	<b>7.28%</b> 70	961

Think about NOW (after attending the Tour of Manufacturing). How much are you...

	<b>A lot</b>	<b>Some</b>	<b>Very little</b>	<b>Not at all</b>	<b>Total</b>
Interested in science, technology, engineering, or math?	<b>42.02%</b> 408	<b>43.25%</b> 420	<b>10.40%</b> 101	<b>4.33%</b> 42	971
Interested in manufacturing careers?	<b>32.56%</b> 310	<b>43.91%</b> 418	<b>14.60%</b> 139	<b>8.93%</b> 85	952
Aware of careers in manufacturing?	<b>48.59%</b> 464	<b>39.79%</b> 380	<b>8.38%</b> 80	<b>3.25%</b> 31	955

- Interest in STEM: change of 11 percentage points for “a lot” post-tour
- Interest in manufacturing careers: change of 10 percentage points for “a lot”
- Awareness of manufacturing careers: change of 20 percentage points for “a lot”

How did you feel about manufacturing careers BEFORE the Tour of Manufacturing?

<b>Answer Choices</b>	<b>Responses</b>	
I thought they were good	<b>38.52%</b>	369
I thought they were just OK	<b>33.51%</b>	321
I didn't think they were good	<b>6.99%</b>	67
I didn't think about them	<b>12.42%</b>	119
I am not sure	<b>8.56%</b>	82
<b>Total</b>		<b>958</b>

How do you feel about manufacturing careers NOW?

Answer Choices	Responses	
I thought they were good	<b>63.10%</b>	607
I thought they were just OK	<b>25.57%</b>	246
I didn't think they were good	<b>2.81%</b>	27
I didn't think about them	<b>4.57%</b>	44
I am not sure	<b>3.95%</b>	38
<b>Total</b>		<b>962</b>

- Change of 24 percentage points for “good”

Which of the following words best describe your thoughts about manufacturing careers? (Check as many as you would like.)

Answer Choices	Responses	
Fun	<b>43.31%</b>	411
Dirty	<b>23.50%</b>	223
Exciting	<b>32.46%</b>	308
Noisy	<b>44.36%</b>	421
Creative	<b>44.68%</b>	424
Hard	<b>34.14%</b>	324
Advanced	<b>46.05%</b>	437
Dark	<b>3.37%</b>	32
Dangerous	<b>20.65%</b>	196
Modern	<b>32.35%</b>	307
<b>Total Respondents: 949</b>		

Demographics

Age:

Answer Choices	Responses	
Under 18	<b>60.61%</b>	580
18-25 years old	<b>12.23%</b>	117
26-45 years old	<b>10.14%</b>	97
46 and older	<b>17.03%</b>	163
<b>Total</b>		<b>957</b>

Sex:

<b>Answer Choices</b>	<b>Responses</b>	
Male	<b>71.40%</b>	639
Female	<b>28.60%</b>	256
<b>Total</b>		<b>895</b>

Participant

<b>Answer Choices</b>	<b>Responses</b>	
Student tour	<b>54.73%</b>	532
General public	<b>43.72%</b>	425
Unsure	<b>1.54%</b>	15
<b>Total</b>		<b>972</b>

## Tour Host Survey

How did you first hear about the Dream It. Do It. MN Tour of Manufacturing?

Answer Choices	Responses	
Received an email about the Tour	18.42%	7
Tourofmanufacturingmn.com	2.63%	1
Dreamitdoitmn.com	7.89%	3
Local Chamber of Commerce	23.68%	9
State Chamber of Commerce	2.63%	1
Social media	0.00%	0
Manufacturing association	15.79%	6
Other (please specify)	34.21%	13
<b>Total Respondents: 38</b>		

Other:

- DEED (3)
- Local Chamber
- Minnesota Works
- Specific person
- Tour organizer
- Business advertised last year
- Corporate office
- Greater Mankato Growth
- AAEDC
- Workforce Council (2)

If they marked they received an email, who did you get the email from?

Answer Choices	Responses	
Minnesota Precision Manufacturing Association	0.00%	0
Central Minnesota Manufacturers Association	5.56%	1
Tri-State Manufacturers' Association	0.00%	0
Minnesota Department of Employment and Economic Development	22.22%	4
Arrowhead Manufacturers & Fabricators Association	0.00%	0
Lakes Area Manufacturers Alliance	0.00%	0
360	0.00%	0
Dream It. Do It. Minnesota	27.78%	5
Other (please specify)	44.44%	8
<b>Total Respondents: 18</b>		

Who was your primary audience for your tour?

Answer Choices	Responses	
Schools	47.83%	11
Community members	8.70%	2
Both	43.48%	10
Other (please specify)	0.00%	0
<b>Total</b>		<b>23</b>

Please rate the value the tours provide to you or your business for each of the following items:

	Very valuable	Somewhat valuable	A little valuable	Not at all valuable	Not applicable	Total
Identifying potential employees	26.47% 9	23.53% 8	29.41% 10	14.71% 5	5.88% 2	34
Marketing or building awareness of your business to the general public	41.18% 14	41.18% 14	14.71% 5	0.00% 0	2.94% 1	34
Identifying potential customers	11.76% 4	8.82% 3	26.47% 9	29.41% 10	23.53% 8	34
Employees interacting with people outside the organization	26.47% 9	38.24% 13	17.65% 6	14.71% 5	2.94% 1	34
Building awareness of or interest in manufacturing as a career option	52.94% 18	32.35% 11	11.76% 4	0.00% 0	2.94% 1	34

Please rate how successful the following aspects of the tour were:

	Very successful	Somewhat successful	A little successful	Not at all successful	Total
The number of tour participants	50.00% 17	41.18% 14	5.88% 2	2.94% 1	34
The engagement of the tour participants	67.65% 23	20.59% 7	5.88% 2	5.88% 2	34
The people who attended the tour were who you wanted	35.29% 12	44.12% 15	14.71% 5	5.88% 2	34

Please rate how much each of the following items presented a challenge to the overall success of your tours:

	<b>Very challenging</b>	<b>Somewhat challenging</b>	<b>A little challenging</b>	<b>Not at all challenging</b>	<b>Not applicable</b>	<b>Total</b>
Providing staff time to lead the tours	<b>5.88%</b> 2	<b>38.24%</b> 13	<b>26.47%</b> 9	<b>26.47%</b> 9	<b>2.94%</b> 1	34
Interrupting manufacturing processes (e.g., line shut down)	<b>0.00%</b> 0	<b>14.71%</b> 5	<b>20.59%</b> 7	<b>50.00%</b> 17	<b>14.71%</b> 5	34
Interrupting front or back office business functions (not related to manufacturing)	<b>0.00%</b> 0	<b>14.71%</b> 5	<b>26.47%</b> 9	<b>50.00%</b> 17	<b>8.82%</b> 3	34
Assuring participant safety	<b>0.00%</b> 0	<b>8.82%</b> 3	<b>29.41%</b> 10	<b>58.82%</b> 20	<b>2.94%</b> 1	34
Coordinating the tour participants (e.g., parking)	<b>0.00%</b> 0	<b>17.65%</b> 6	<b>32.35%</b> 11	<b>47.06%</b> 16	<b>2.94%</b> 1	34
Working with the coordinating organizations (e.g., associations, chambers, 360 Center, etc.)	<b>0.00%</b> 0	<b>5.88%</b> 2	<b>11.76%</b> 4	<b>76.47%</b> 26	<b>5.88%</b> 2	34
Promoting the tour to the general public	<b>2.94%</b> 1	<b>14.71%</b> 5	<b>2.94%</b> 1	<b>64.71%</b> 22	<b>14.71%</b> 5	34
Coordinating with local K-12 schools	<b>5.88%</b> 2	<b>14.71%</b> 5	<b>17.65%</b> 6	<b>47.06%</b> 16	<b>14.71%</b> 5	34

Was your participation in the tour worthwhile?

<b>Answer Choices</b>	<b>Responses</b>	
Yes, very	<b>44.12%</b>	15
Yes, somewhat	<b>41.18%</b>	14
No	<b>8.82%</b>	3
Not sure	<b>5.88%</b>	2
<b>Total</b>		<b>34</b>

Would you participate in the tour again?

Answer Choices	Responses	
Yes, certainly	61.76%	21
Yes, maybe	29.41%	10
No	0.00%	0
Not sure	8.82%	3
<b>Total</b>		<b>34</b>

How helpful was the provided toolkit?

Answer Choices	Responses	
Very helpful	2.94%	1
Somewhat helpful	64.71%	22
Not helpful	20.59%	7
Don't know	11.76%	4
<b>Total</b>		<b>34</b>

Which of the promotional materials did you use from the toolkit to prepare for the Dream It. Do It. MN Statewide Tour of Manufacturing? (check all that apply)

Answer Choices	Responses	
Dream It. Do It. MN Tour Host Toolkit guidelines (labeled Read First)	35.29%	12
Press release template	11.76%	4
Tour promotional flyer	26.47%	9
Tour poster	38.24%	13
Public service announcement template	2.94%	1
Radio ad template	8.82%	3
Social media posts	11.76%	4
Letter template for schools to use for parents	11.76%	4
Host a Tour flyer	20.59%	7
<b>Total Respondents: 34</b>		

Have you participated in the Dream It. Do It. MN Statewide Tour of Manufacturing in any of these years (check all that apply)?

Answer Choices	Responses	
2015	47.06%	16
2014	38.24%	13
2013	14.71%	5
2012	20.59%	7
First time participating this year	29.41%	10
Other (please specify)	20.59%	7
<b>Total Respondents: 34</b>		

When would you prefer the Dream It. Do It. MN Statewide Tour of Manufacturing to be held?

Answer Choices	Responses	
A week aligned with Minnesota Manufacturing Week and National Manufacturing Day	47.06%	16
The whole month of October	8.82%	3
No preference	41.18%	14
Other (please specify)	2.94%	1
<b>Total</b>		<b>34</b>

Other:

- Flexibility in scheduling tours and exposure in the media if it is a month

Answers for other types of support that would be helpful included:

- Consistent support who could answer questions, guide through process
- Creating a network of local manufacturers to participate
- Earlier notice
- Funding/continued funding
- Signage
- None; ability to handle; organized tour

Answers for additional comments included:

- More advance planning—need to know in July/August for budgets.
- Liked safety glasses for students.
- Appreciate opportunity to participate/enjoy participating.
- Host when employed people aren't working.