



Reshoring Initiative

Bringing Manufacturing Back Home

Skilled Workforce:
Key to Reshoring and the Mfg. Renaissance

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President
Reshoring Initiative

- For reshoring to succeed we need to recruit and train a larger, smarter, better trained skilled workforce.
- For recruitment to succeed reshoring's success must be publicly obvious so that society, school and student understand that:
 - Manufacturing is returning
 - Manufacturing is an excellent career choice



Background



Workforce: Current Situation

- 82% of manufacturers: enthusiastically seeking
 - Engineers
 - CNC and 3D operators and programmers (critical)
- Excess supply of non-technical university graduates (40%)
- Soaring student debt
- Manufacturing:
 - Has shifted largely to modern high tech
 - Is growing
 - Pays well! (avg. 19% more than non-mfg)



Trend Towards Training like in Switzerland and Germany

- Apprenticeships
- Strong academic and technical training
- Creating, innovating, team skills
- CNC, computers, 3D, CAD
- Students who would do fine at the university but want a practical foundation for a degree, no tuition, earnings starting now.

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PATHWAYS TO PROSPERITY

MEETING THE CHALLENGE OF
PREPARING YOUNG AMERICANS
FOR THE 21ST CENTURY

PATHWAYS TO PROSPERITY PROJECT

 HARVARD
GRADUATE SCHOOL OF EDUCATION

FEBRUARY 2011

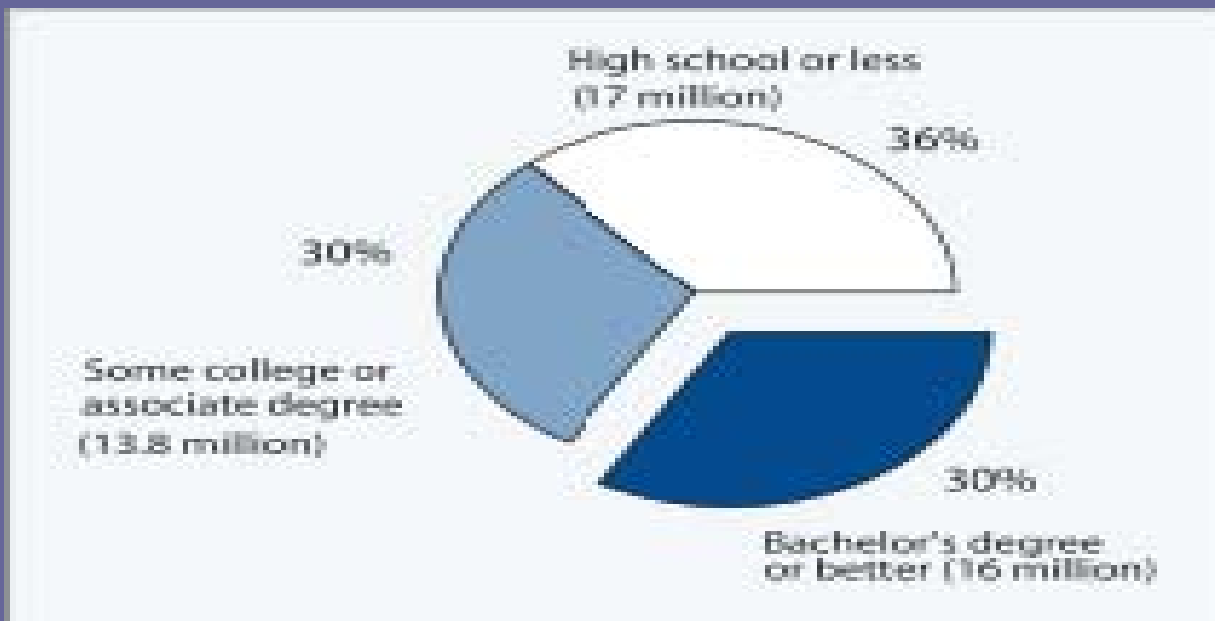


New wisdom about education and training

- “Post high school credential for all” replaces “College for all”

Source: [Pathways to prosperity](#), Harvard Graduate School of Education, Feb. 2011

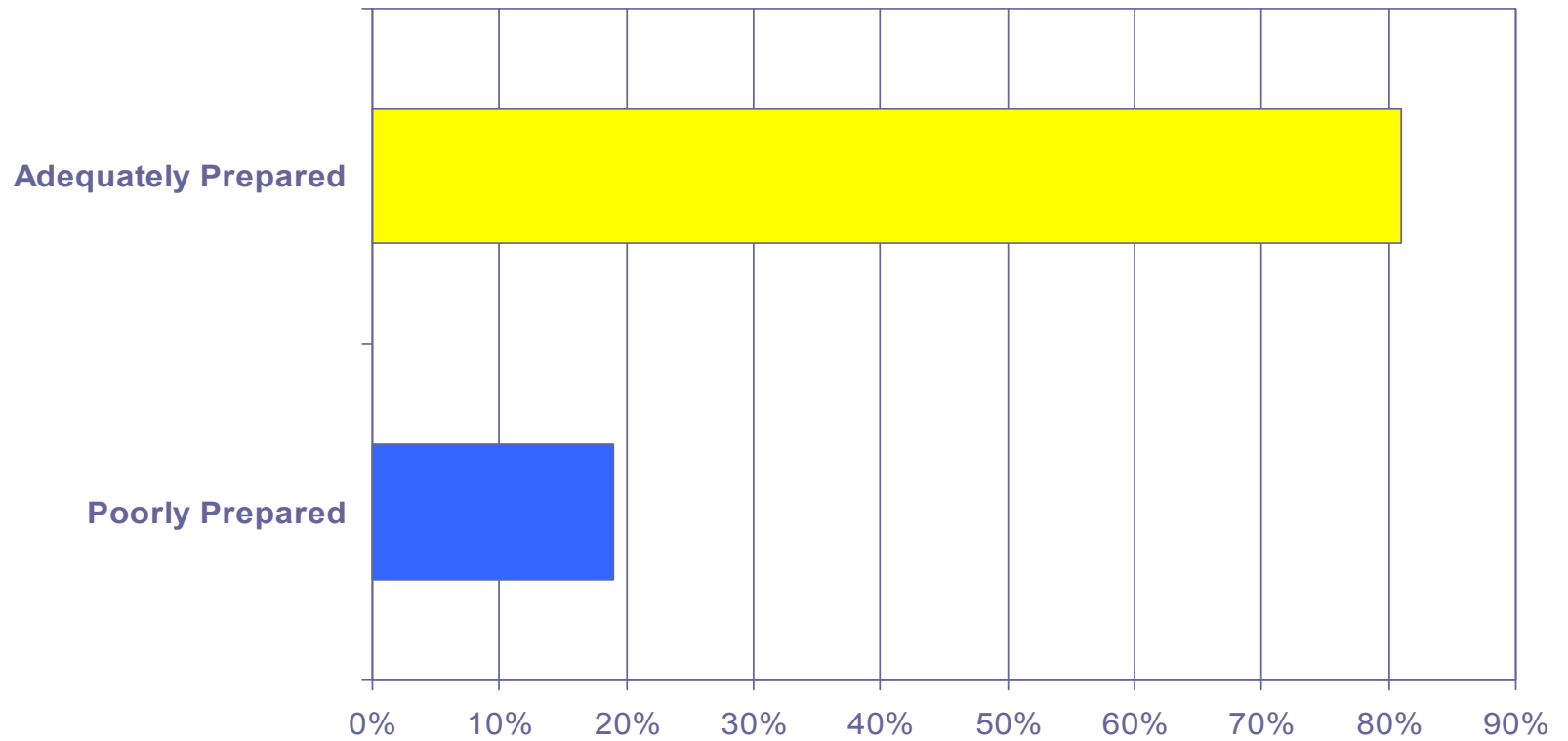
**Figure 3:
 Educational Requirements of New and
 Replacement Demand Jobs by 2018
 and Number of Jobs**



Source: Thomas P. Kane, ed., *Workforce Skills and Education: The Road to the Jobs of the Future* (Washington, DC: American Council on Education, 2010), p. 10. The authors of this report also note that the percentage of new and replacement demand jobs requiring a bachelor's degree or better will rise to 35% by 2018 and the workforce by June 2010.

Community Colleges Offer a Good Solution

How Prepared for a Typical Entry Level Job in Your Company Are Applicants with a Certificate from a 2-Year College?



Source: NAM 2005 Skills Gap



Certificates and licenses pay off!

27 % of people with post-secondary licenses or certificates (credentials short of an associate's degree) earn more than the average bachelor's degree recipient.

Source: "Preparing the Workers of Today for the Jobs of Tomorrow" the **Council of Economic Advisors** July, 2009



Occupation More Important Than Degree Level

- “80% of associates degree holders earn more than the Bachelor’s median income.”
- “Occupation, not degree level, determines salary.”

Source: AP Carnevale (2000) (ED439743)



Dunwoody's Machine Tool Technology AAS Degree Program

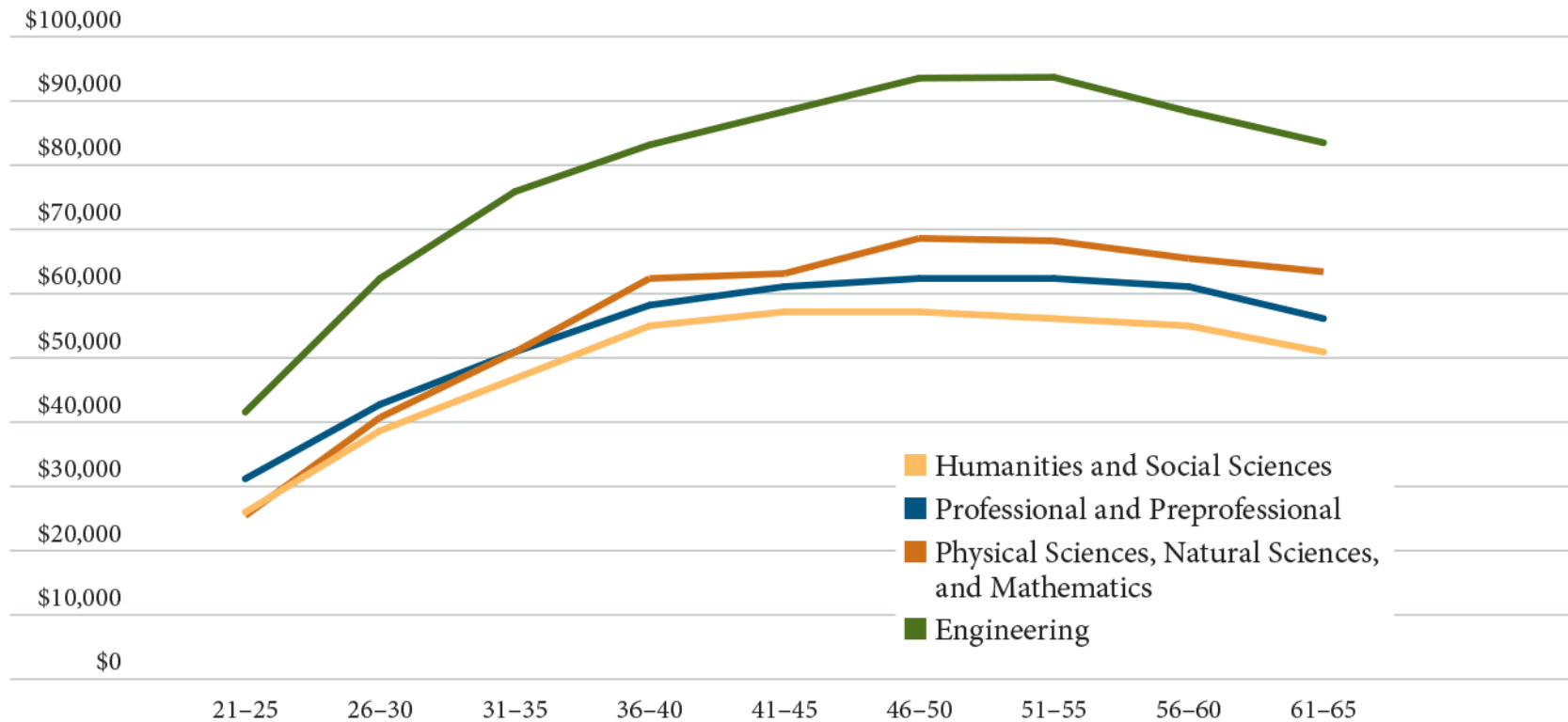
- Minneapolis, MN
- Number of June 2012 graduates: 22
- Number fully employed in the industry when graduating: 21
- (Recent BA/BS grads employed fulltime: 47%)
- Average starting salary: \$17.64 per hour
- Requests to hire graduates: 450
- Complaints from companies: 50

5-Axis Milling



Apple needed a 5-axis CNC milling expert:
\$\$\$\$

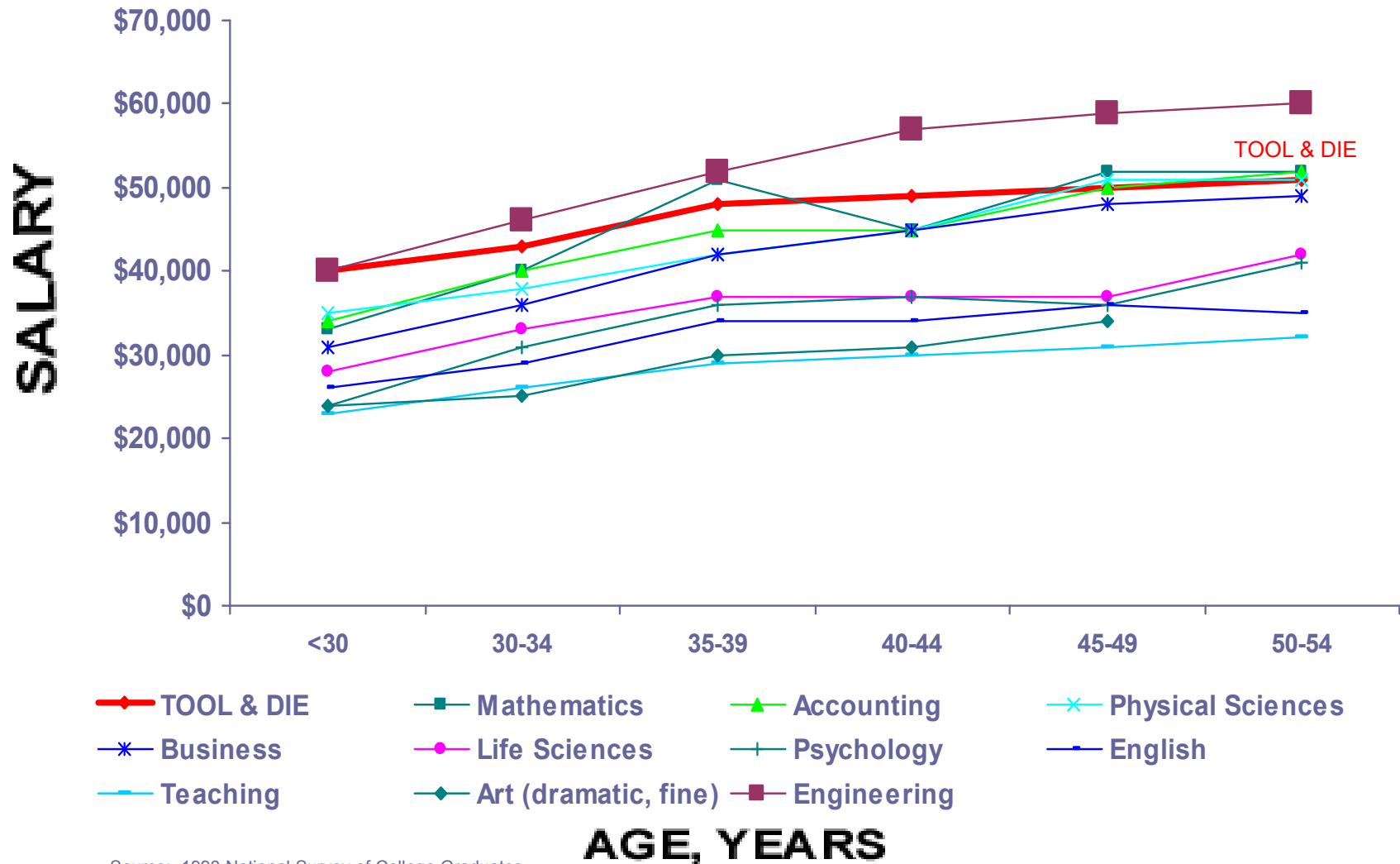
Median earnings for graduates with only baccalaureate degrees (2010-11)



Source: *How Liberal Arts and Sciences Majors Fare in Employment*. 2013

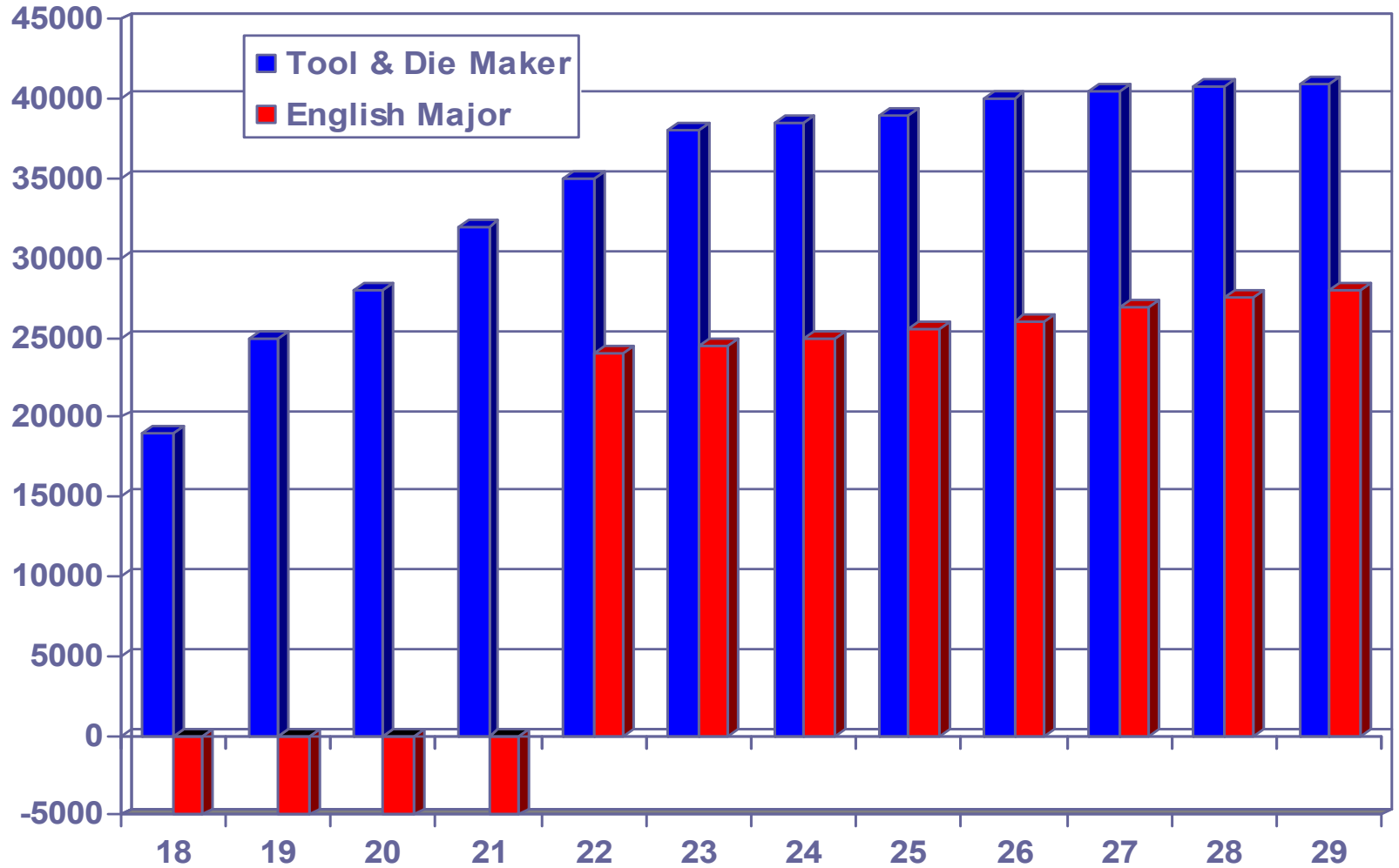


Median Annual Salary of Bachelor's Graduates by Field of Major and Age, 1993



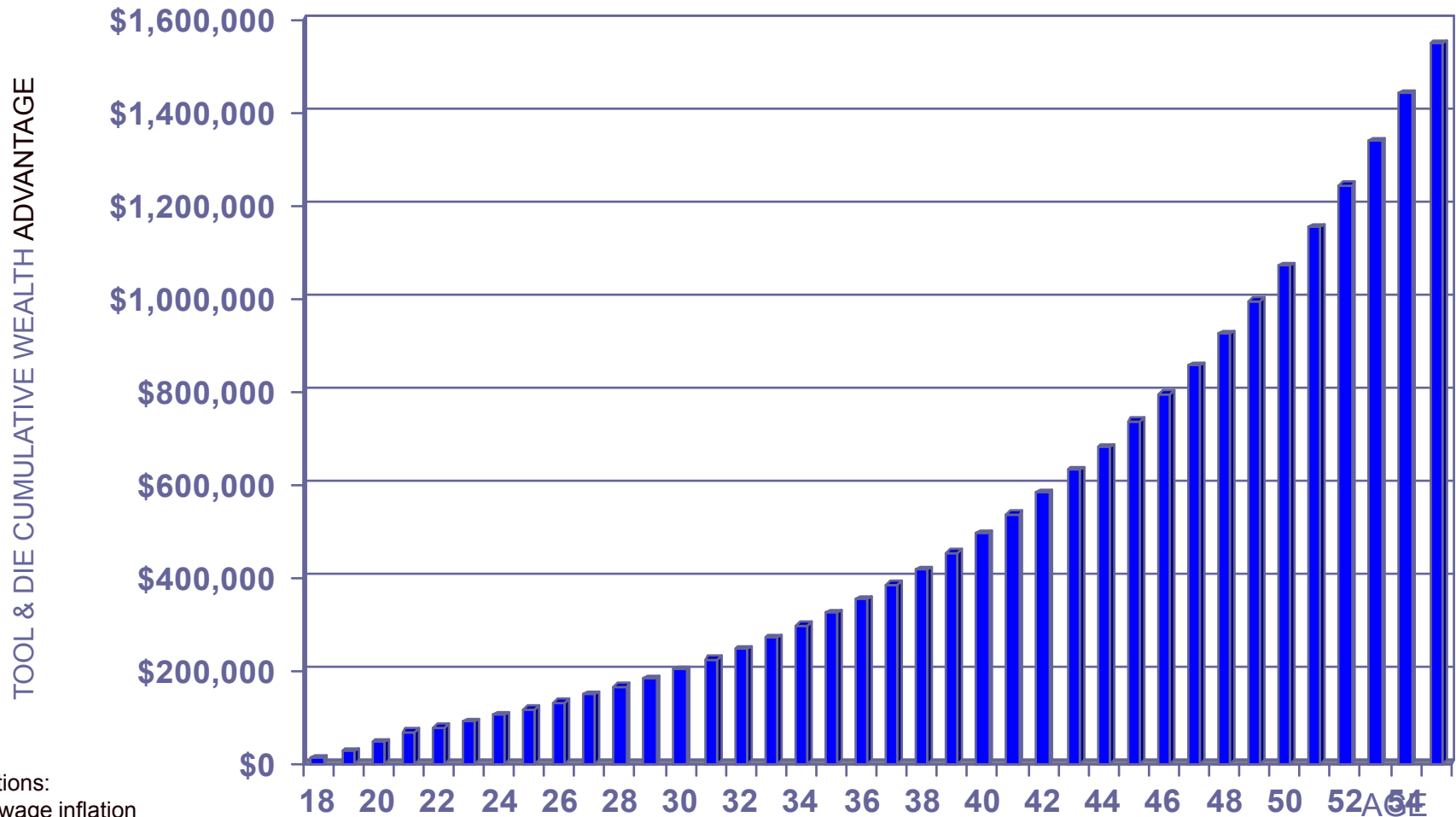
Source: 1993 National Survey of College Graduates, NSF/SRS, NTMA, PMA/TMA.
(Data will next be released in 2003-2004)

Annual Income/Age





Tool & Die or English Major? A Million \$ Decision



Assumptions:

1. Zero wage inflation
2. Savings = 50% of difference in income
3. Investment return of 7% per year on savings



ROI on Skilled Workforce Training

PERSPECTIVE	MFG. TECH, ASSOCIATES DEGREE	TOOL&DIE APPRENTICE	ENGLISH, BACHELOR'S DEGREE
WORKER	39%	125%	6%
UNITED STATES	163%	233%	30%



Entrepreneurial Opportunities

BACKGROUND	FOUNDED	PURCHASED	INHERITED	UNSPECIFIED	TOTAL OWNERS
APPRENTICE GRADUATE	50%	35%	10%	40%	35%
MACHINING TRAINING BUT NOT APPRENTICE	24%	20%	39%	20%	28%
MANUFACTURING MANAGEMENT	11%	12%	11%	20%	11%
BUSINESS MANAGEMENT BUT NOT MANUFACTURING	4%	24%	19%	20%	12%
OTHER	11%	8%	21%	0%	13%
TOTALS	100%	99%	100%	100%	99%
% of Total	50%	19%	24%	6%	99%

CONCLUSION: APPRENTICES & MACHINISTS FOUND COMPANIES

SOURCE: NTMA/CHARMILLES OWNER/MANAGER SURVEY. SURVEY DATE: 2001



INDUSTRY & COMMUNITY COLLEGE RECRUITING TOGETHER

IDEA: JOINT HELP WANTED ADS IN THE
LOCAL PAPER

-1 AD

-1 OR MORE COMPANIES:

-PRAISE THE COLLEGE

-LIST CURRENT JOB OPENINGS
("THE OPPORTUNITIES")

-COLLEGE:

-DESCRIBES ITS PROGRAM
THAT FIT THE JOB OPENING
("THE MEANS")

SOURCE: CHIPPEWA VALLEY TECHNICAL
COLLEGE, EAU CLAIRE, WI

Join the Resurgence in Wisconsin Manufacturing

Demand for skilled graduates in the machine trades is again soaring. We have received requests for more than 100 graduates in Tool and Die and Machine Tool in the past 8 to 10 months. Graduates in the machine trades are accepting jobs paying \$17 to \$18 an hour with excellent fringe benefits. Many third semester students are accepting jobs even as they complete coursework. The opportunities are excellent. Classes start every eight weeks.

Contact Manufacturing Technology Campus at 715-874-4604.



"CVTC has always played an important role in providing us with qualified candidates. Right now we have openings for toolmakers starting at \$20.00 an hour and machinists starting over \$14.00, and we can't find them fast enough. I see this as a great career opportunity now and into the future."

Peggy Schlagenhauser, HR Generalist, Hutchinson Technology

www.htch.com

Eau Claire Leader Telegram

Apprenticeship 2000



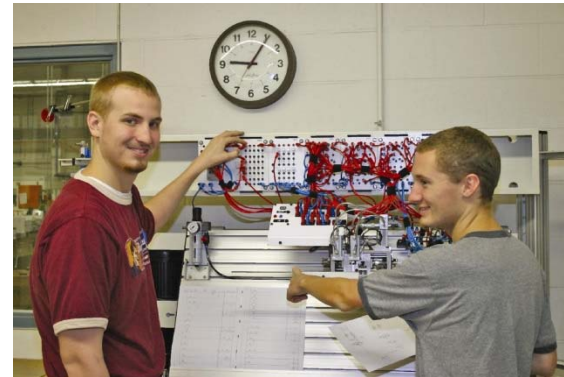
Why Partnership of Companies?

- Strength in numbers (school)
- Recruiting is shared
- One program
- Expenses are shared (graduation, advertisement.....)
- To share knowledge
- Agreement between Companies (job hoppers)
- Soon or later everyone needs a favor



European Based Technical Training

- Learning Manufacturing Skills Hands-On
- Dual Training Theory in College, Hands-on at Sponsor Company
- Scholarship (free college and tuition)
- Manufacturing Technology Degree (AAS)
- Journeyman Certificate by the Department of Labor
- Guaranteed Employment After Graduation



- 2006 Apprenticeship Signing Group





Statistics of Ameritech as of ~ 2007

- Avg. age (all employee's) – 34.3
- Avg. age (manuf / design only) – 30.4
- Avg. tenure (all excluding Steve) – 6.74 yrs
- avg tenure (all, excl. Steve, and (2) 1st year apprentices) – 7.37 yrs
- Avg wage / hr (manf + design) - \$19.07
- Current apprentice/grads
 - Manuf/design = 33%
 - Total company = 28%



Simple Solutions to Improving Image Nationally

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Employment Projections

SHARE ON: **FONT SIZE:** **PRINT:**

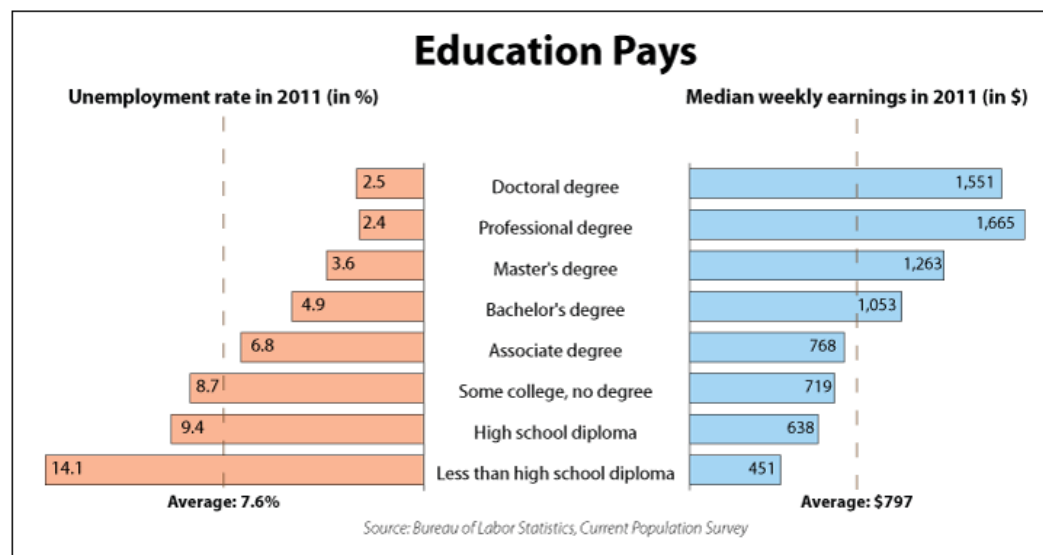
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Education pays...

Education pays in higher earnings and lower unemployment rates



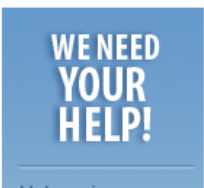
[Chart data \[TXT\]](#)

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.

Source: Bureau of Labor Statistics, Current Population Survey.

BLS has some data on the [employment status](#) of the civilian noninstitutional population 25 years and over by educational attainment, sex, race, and Hispanic origin online.

The Census Bureau also has some data on [educational attainment](#) online.





Adopt Better Terminology

Current	Proposed
High skill	Academic skill
Middle skill	Technical skill
Low skill	Manual skill



And Improve Image Locally

Issue	Solution
“Trades” and “vocations” image	Call them “Professions”
“Middle skills”	“Technical Skills”
Manufacturing career image due to offshoring	Industry collect and media report the local reshoring case of the month. Use our Case Studies feature.

- **Local:**
 - Document that training pays locally
 - Document and promote local reshoring successes
 - Skilled “professions” not “trades” or “vocations”
 - Show that much of the university degree income difference is tied to family socio-economics
 - ROI on training vs. specific degree fields
- **National:**
 - On-line library of promotional material.
 - Apprenticeship loans like student loans
 - SBA loans require apprenticeship hires



Our Programs

- The Reshoring Initiative would be pleased to advise states, cities or companies in adopting one of our skilled workforce programs: <http://reshorenow.org/skilled-workforce-development/>