

10 REASONS

Why Companies
Believe In
the Power of

SEMI High Tech U

For eight years,
the High Tech U program
has educated students
about high-tech careers.
The program gets
students excited
about the future and
sets many of them
on the path to
joining tomorrow's
high-tech workforce.



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Technology Is the Future

Technology is the future, but often students and teachers do not make the critical connection between the classroom and the real world of high tech.

SEMI High Tech U™ (HTU) works with hundreds of sponsors in five countries to make that connection. To date, over 3500 students and teachers have completed HTU. This program is important for three reasons:

- For students and teachers: HTU provides a rare opportunity to connect with professionals working in high-tech industries. The program keeps students connected with SEMI and each other through events and social networking for up to five years.
- For sponsors: HTU provides a forum for sponsor representatives and higher learning institutions to meet and collaborate.

For educational entities: HTU helps connect students with local colleges and universities.

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Students Make the Connection

Students love the technology powering the electronic devices they rely on so heavily. But few make the connection between their iPod, cell phone, or PC and their future career choices. High Tech U changes that. In program after program, students experience magical “Ah ha!” moments.

In those moments of understanding, the direction of lives changes, because students realize that not only is high tech cool ... but high tech can be a life-long passion and a rewarding career.

“The spontaneous, enthusiastic response I get from students keeps me coming back as a volunteer instructor. I can see that what I do is playing a role in shaping the future of many of our High Tech U students. Knowing this gives me a great sense of satisfaction.”

— Brad Houser, Automation Manager, Intel

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High Tech U Is Effective

At a recent SEMI HTU reunion, 86 percent of HTU graduates reported that they are taking or are planning to take Science, Technology, Engineering and Mathematics (STEM) in college as a result of HTU.

Eighty eight percent of HTU students revealed that HTU influenced their education and career choices; 71 percent of students with “undecided majors” now want to pursue a career in engineering; and 62 percent are taking more math, science and technology courses than originally planned.

Since its inception, the SEMI Foundation has nurtured and developed the SEMI High Tech U industry-driven math and science-based career exploration program for high school-age students and teachers. The SEMI Foundation has granted scholarships totaling nearly \$200,000 to promising high school students.

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HTU Offers Relevant Curriculum

High Tech U is usually three days long. The curriculum is continually revamped to ensure that it remains cutting edge, and relevant. Each year, we introduce new pilot modules for evaluation. HTU curriculum includes:

- Math and Measurement –The Statapult: The air is filled with hacky sacks as students learn how medieval technology relates to modern day chip making in a math and statistics exercise called “Statapult.” This module integrates numerous skills including reading graphs, estimation, process and quality control.
- Atoms and Materials – Matter Matters: Through the use of batteries, light bulbs and salt water, students experiment to learn about conductivity and electricity. The module is linked together through a team game that tests their knowledge of the periodic table in a “Jeopardy”-type of setting.
- Nanotechnology: Students find out “How small is small?” and “What is nanotechnology?” They participate in small group activities that link nanotechnology to their daily lives.
- Electronics Devices: Students work with diodes, transistors and capacitors on a breadboard to learn how to store and transmit energy.

(continued...)

- **Gates & Human Calculator:** Students learn about three kinds of gates (“and,” “or” and “not” gates) to lay the foundation for playing the Human Calculator game. Then using a “feet-on” exercise like the game “Twister,” students try not to get tangled up as they simulate electron flow in microprocessors when binary numbers translate to decimals.
- **Working in Industry and Educational Pathways:** Students learn about various educational and career pathways that can lead to exciting careers in the high-tech industry.
- **Preparing for a Behavioral Interview:** Students learn how to prepare for, and participate in an interview. Human resource professionals lead students through the “ins and outs” of a behavioral interview—sharing why an interviewer learns more through open-ended questions than through “yes” or “no” questions.
- **Mock Interview Sessions:** Students prepare for the “real world” by sharpening their job interviewing skills through one-on-one mock interviews with real hiring professionals in the semiconductor industry. You can view some of these HTU activities at <http://www.youtube.com/semihightechu>

“Teachers learned first-hand (at Intel and SolarWorld in Oregon) about technology developed and used locally by the semiconductor industry, and the contributions it makes to emerging fields like solar. Back in the classroom, this knowledge will help them share a more complete and exciting picture of career possibilities here in the local workforce.”

— **Aubrey Clark**, NW Region Education Manager, Intel

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Impressive Accomplishments

HTU introduces students to the semiconductor and other high-technology industries in a way that increases their knowledge and stimulates their interest. It’s a unique program that connects students, their teachers, industry leaders, and higher learning institutions. By any measure, High Tech U has been a great success:

- **Student programs:** Nearly 100 student programs have been presented in 13 states and five countries.
- **Teacher programs:** More than twenty teacher programs have also been delivered. These programs reinforce the concepts that students learn at High Tech U. In most cases, continuing education unit (CEU) credits are available.
- **Social media presence:** To improve communication with students and provide forums for staying in touch, High Tech U has established a social media presence on FaceBook, YouTube, and LinkedIn.
- **Geographic expansion:** The SEMI Foundation expanded internationally, presenting a High Tech U Student and Teacher Edition program sponsored by the Advanced Technology Investment Corporation (ATIC) in collaboration with GlobalFoundries, AMD and Applied Materials in Singapore. Participants came from Abu Dhabi, UAE.

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HTU Licensees Maximize Resource Use

To expand the reach of our High Tech U programs, we encourage sponsors to become licensees, taking responsibility for presenting programs with minimal assistance from Foundation staff. In 2010, Infineon, Soitec and STMicroelectronics were licensees, joining the Maricopa Advance Technology Education Center (MATEC).

“The enthusiastic feedback from earlier High Tech U programs we’ve sponsored convinced us that this was a program we’d like to take and run with.... we can customize the program to appeal to our young people and their teachers. This will help to raise the level of understanding of industry in schools, allowing participants to get a very real sense of the type of work we do”.

— **Monika Kircher-Kohl**, CEO, Infineon

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Staying in Touch is Key

One of the strengths of SEMI HTU is that it stays in touch with students, encouraging them to stay on the college math and science track. The Foundation schedules periodic alumni reunions to help continue the momentum of High Tech U. Alumni events include student networking opportunities and continuing education. The opportunity is also used to gather updates from students about their education plans, and obtain survey data that help track student progress.

At one past reunion at SEMI headquarters, James Plummer, Dean of Engineering and Professor of Electrical Engineering at Stanford University, and Art Zafiropoulo, Ultratech CEO, spoke to students.

Zafiropoulo welcomed the students, and Plummer discussed the 21st century attributes and skills that undergraduate students need to be successful in the engineering field, including creativity, good communication skills, global knowledge and experience, and an entrepreneurial outlook.

At another reunion, High Tech U alumni toured the Computer History Museum in Mountain View, California. As part of the High Tech U program at Lam Research Corporation, students got the “inside scoop” about the college experience from HTU graduates and Lam scholarship recipients. During the summer, students can reconnect with the Foundation by volunteering as summer interns at SEMI headquarters and working at SEMICON West.

Through events and activities, High Tech U strives to engage with students for five years after their High Tech U graduation — typically their sophomore year in high school to sophomore year in college. This allows students to continue their relationship with SEMI and sponsoring companies long after the three-day High Tech U program. Reconnection opportunities include activities such as tours, conferences, education workshops, and internships, in addition to social media venues.

“Interning at SEMI helped me leverage the volunteering and networking skills I learned at High Tech U. It was a great experience and it’s a definite plus on my resume. High Tech U reinforced my interest in high tech, and now I’m a junior majoring in Engineering at Cal Poly.”

— **Tony Zhang**, SEMI Summer Intern, Cal Poly Engineering Student

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Enthusiasm of Educators

Educators are very enthusiastic about SEMI’s High Tech U programs!

“High Tech U reaffirmed the relevance of what I do in the classroom: preparing my students for high tech jobs. It opened my eyes to the wealth of resources that are available through the businesses in our own community. I had several students attend the High Tech U program last year and they came back fired up about engineering.”

— **Carol Gaumond**, Science and Engineering Teacher, Glencoe High School, Hillsboro, Oregon

“This is the best professional development program I have ever experienced in my 16 years of teaching.”

— **Mark Kaercher**, Math Teacher, Shaker High School, Latham, NY

“High Tech U is exactly the kind of hands-on, real world engagement students need to ignite that spark about STEM (Science, Technology, Engineering, and Mathematics) careers. So many of our young people cannot comprehend how math and science are used in the work world and as a result, their interest in math and science rarely moves past the required courses in school. We are thrilled to have this opportunity for our youth and our community.”

— **Brandi Stewart-Wood**, Former Director of Strategic Initiatives, Southwest Washington Workforce Development Council (SWWDC)

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Alignment With Outreach Goals

High Tech U aligns with sponsors’ community outreach goals. SEMI HTU is viewed as an important program by a growing number of companies working in their local communities to help develop a high-tech workforce. For some, the work of the SEMI Foundation helps support their company’s mission and community service objectives. Others have a deep commitment to the idea of helping expand possibilities for young people.

No matter what the reason, all agree that SEMI HTU is an important endeavor that deserves their continued support.

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Growing HTU Sponsorship Base

Sponsors include:

Advantest
Air Products
AMD
Applied Materials
ASML Trust
ATIC
Avnet
Capital Region BOCES
CEG
Columbia Machine
Computer History Museum
Dai Nippon Screen
Disco
DNS Ebara
Elpida Memory
Employers Overload
FH Kärnten
Fremont Bank
GlobalFoundries
Honeywell
Hatakeyama Foundation
Hewlett Packard
Hitachi Chemical
Hitachi High Technologies
Honeywell
Horiba STEC
HSBC
Infineon
Infotonics
Intel
JEITA
Lam Research Corporation
Liquid Packaging
NEC Electronics
New York State United Teachers (NYSUT)
NORPAC
Novellus
Pitney Bowes
Selete
SEMI Japan
SEMI Pacific Northwest Steering Committee
Soitec
SolarWorld
Southwest Washington Workforce
Development Council (SWWDC)
SRP
STMicroelectronics
Suzuden
Taiyo Nissan
Tokyo Electron (TEL)
SuperPower
Underwriters Laboratories Inc.
Weyerhaeuser
WIRED
Workforce Consortium
Work Systems Inc.

Educational sponsors include:

Arizona State University Polytechnic
Arizona State University Skysong
Clark College (Vancouver, WA)

Estrella Mountain Community College
(Avondale, AZ)
INPG (Grenoble, France)
Lower Columbia College
Mission College (Santa Clara, CA)
Portland Community College (OR)
San Jose State University
University of Rochester (NY)

In addition to underwriting by High Tech U sponsors, the Foundation received two generous donations from KLA-Tencor and Lam Research Corporation in the amount of \$100,000 each. A \$25,000 gift of Ultra-tech stock was also presented to the Foundation. This kind of funding is very important to support future HTU programming.

How You Can Help the SEMI Foundation and High Tech U

High Tech U needs your support in “Making the Connection” between the classroom and the real world of high tech. We welcome your financial contributions, which help support the activities of the SEMI Foundation, including the Foundation’s scholarships and High Tech U programs for high school students and teachers. We are extremely grateful to the individuals, companies and organizations that support the Foundation and HTU.

Because the SEMI Foundation is a 501(c)(3) non-profit charitable organization, all contributions are tax-deductible for U.S. tax reporting. If you wish to make a contribution, please make checks payable to SEMI Foundation, and mail to:

SEMI Foundation
3081 Zanker Road
San Jose, CA 95134

Donors are invited also to consider planned giving opportunities such as a charitable trust or corporate stock donations.

For more information, please contact:

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