NANOTECHNOLOGY TECHNICIAN'S TRAINING PROGRAM

PARTICIPANT'S MINIMUM QUALIFICATIONS

You must provide proof that you have attained either one of the following minimum prerequisites (Examples: copy of academic records, job certifications with detailed job descriptions):*

• Associate degree in Engineering Technology, Engineering, Biotechnology, Physics, Material Science, Chemistry, Bio-Engineering, Biology, Life Science or related field; OR,

• A minimum of 1-year completion of studies and 1-year of work experience directly related to any of the fields listed above; OR,

• High school diploma or equivalent and a minimum of two years work experience directly related to any of the fields listed above. English comprehension and knowledge of entry level math are required.

***To request prerequisites waiver, please submit a letter of justification addressed to the Project Director stating why you want to attend the training, your educational and career goals and any background you may have, such as previous work experiences with nanotechnology or related industries.**

How to register

1. Print registration forms (click on **PDF** located on the **"Register for this section"** link).

2. Complete all forms (please do not leave any fields blank).

3. Sign all required forms.

4. Mail completed forms on or before Wednesday, January 4, 2012 to the:

   Nanotechnology Training Project Director

   114 S. Del Rosa Drive

   San Bernardino, CA 92408

Important: Please do not forget to include a copy of your academic records and/or work experience certifications clearly showing how you meet the minimum requirements of the training. If requesting a waiver of prerequisites, please include your letter of request addressed to the Project Director and state your reasons or justifications why the prerequisites should be waived. All training registrants will be notified of his/her acceptance to the training program within 3 - 5 days of receipt of your completed registration package.

Questions: Please call 909-382-4001 or via email at info@attctraining.org.

San Bernardino Community College District
114 South Del Rosa Drive, San Bernardino, CA 92408, Phone: (909) 382-4001 – Fax: (909) 382-4003, www.attctraining.org

NANOTECHNOLOGY TECHNICICIAN'S TRAINING REGISTRATION FORM

Please fill out this registration form clearly and completely, but only one person per registration form. Mail completed registration form to the address listed above. You must be at least 18 years old to attend this training.
(For information, please access our website at www.attctraining.org or call 909-382-4001.)

PLEASE PRINT CLEARLY

COMPANY NAME

Contact Information: Please use name and address for which correspondence should be mailed.

FIRST NAME **MI** **LAST NAME**

ADDRESS NUMBER **STREET NAME** **APT. #**

CITY **STATE** **ZIP CODE**

AREA CODE / **PHONE NUMBER** —

EMAIL ADDRESS

NANOTECHNOLOGY TECHNICIAN'S TRAINING

(New Schedule: January 9 – March 1, 2012)

PARTICIPANT MUST ATTEND ALL SIX COURSES (15 HOURS EACH) TO COMPLETE TRAINING. Section "A" meets from 2:00 p.m. – 5:00 p.m. Section "B" meets from 6:00 p.m.—9:00 p.m. (IMPORTANT: You must only register and attend courses in the same section).

I would like to register and attend (please check only one):

☐ **Section A (2:00 p.m. – 5:00 p.m.)** ☐ **Section B (6:00 p.m. – 9:00 p.m.)**

(Training schedules are subject to changes)

Sect-NTT01-12
Intro to Electronic Devices
January 9, 10, 11, 12 and 17
ATTC Room 119

Sect-NTT02-12
Intro to Micro/Nano Fabrication
January 18, 19, 23, 24 and 25
ATTC Room 119 and UCR Lab

Sect-NTT03-12
Intro to Optoelectronic Devices
January 26, 30, 31, February 1 and 2
ATTC Room 119

Sect-NTT04-12
Intro to Nano Characterization
February 6, 7, 8, 9 and 13
ATTC Room 119 and UCR Lab

Sect-NTT05-12
Intro to Device Characterization
February 14, 15, 16, 21 and 22
ATTC Room 119 and UCR Lab

Sect-NTT06-12
Intro to Materials Characterization
February 23, 27, 28, 29 and March 1
ATTC Room 119 and UCR Lab

HOLD HARMLESS STATEMENT: I agree to hold the Applied Technology Training Center and the San Bernardino Community College District and all its officials and employees free and harmless from all legal action which may result from my attendance in the activities of the Center for the Advancement of Nanotechnology (NanoCenter) and the Applied Technology Training Center (ATTC).

SIGNATURE: _____ **DATE:** _____

Applied Technology Training Center ● 114 S. Del Rosa Drive, San Bernardino, CA 92408 ● 909-382-4001

SUPPLEMENTAL APPLICATION FOR THE NANOTECHNOLOGY PROGRAM (EVENTS/ACTIVITIES)

Funded by the U.S. Department of Labor under Grant No. CB-18234-09-60-A-6

1	Applicant Name (please print):
2	Social Security Number***:**
	(*****Note**:** This information will be kept strictly confidential and will not be shared):
3	Address:
4	County:
5	Telephone Number (Home): Telephone (Office):
6	Telephone Number (Cell):
7	Gender: Male___ Female ___ (please check one)
8	Ethnicity: Are you Hispanic or Latino? Yes___ No___ (please check one) (Please note that the term "Hispanic/Latino" includes persons of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture in origin, regardless of race.)
9	Race: Please check only one of the following. Please note that ethnicity and race are separate and are required to be captured separately by the Office of Management and Budget (OMB). Even if you have already recorded your "ethnicity," we ask that you record your race for federal information collection and accountability purposes.*
a	American Indian or Alaska Native (put the exact definition here) ____
b	Asian (put the exact definition here) ____
c	Black or African American (put the exact definition here) ___
d	Native Hawaiian or Other Pacific Islander (put the exact definition here) ___
e	White (put the exact definition here) ___
f	More Than One Race (put the exact definition here) ___
	*If you self-identify as more than one race, please only check 9f
10	Hispanic/Latino *and* More Than One Race: Yes ___ No ___ (Applicants for this federally-funded project are asked to record their ethnicity, race and ethnicity/racial status combined. In other words, please complete each of these three separate items.)
11	Eligible Veteran Status: Please check one of the following
a	You served on active duty etc. etc. ___
b	Others (Explain):___
c	You are the spouse etc. etc.___
d	Does not apply ___
12	Disability Status (Please note that your self-identification will not impact your project eligibility; this information is being collected for federal information collection and reporting purposes only and will not impact your project participation). Please check YES if you have a disability, which is defined as a physical or mental impairment [etc. etc.]
a	Yes ___
b	No ___

13	Employment at participation:
	Employed: _____ Employed but received termination notice or military separation:_____
	Not employed or not in military:_____
	Date of Hire: If no longer working, last date of work:
	Company Name:
	Address:
	Name of Supervisor: Tel. # of Supervisor:
14	Last grade completed at training enrollment
	Never attended:_____ Specify: _____ (First up to Twelfth Grade) H.S. Diploma:_____
	GED:____ Vocational Tech School (Graduate):_____ College Freshman:_____
	College Sophomore:_____ Associate Degree:_____ College Junior:_____
	Bachelor of Arts:_____ Bachelor of Science:_____ Masters degree:_____ Doctorate:_____
15	Date of birth:_____ Age:_____
16	Marital Status: Single:___ Married:___ Divorced:___ Widowed:___ Separated:___ Common Law:__
	_____ _____
	Applicant Signature Date
	About This Information Collection: This project is funded by the U.S. Department of Labor Employment and Training Administration and the information is being requested to comply with federal reporting requirements. You cannot be denied service for refusal to provide your Social Security Number, for example, but we request that you do so and assure that your information will be kept safe and secure.

San Bernardino Community College District
114 South Del Rosa Drive, San Bernardino, CA 92408, Phone: (909) 382-4001 – Fax: (909) 382-4003, www.attctraining.org

PERMISSION TO RELEASE EDUCATION RECORD INFORMATION FOR CBJT GRANT FUNDING

Requested by (Student):

Last Name: **First Name:** **LAST 4-DIGITS OF SS #:**

Release to: **San Bernardino Community College District (SBCCD/ATTC)**
to share data with U. S. Department of Labor
114 S. Del Rosa Drive
San Bernardino, CA 92408

Education record information to be released:

1. Enrollment in training program (including training beginning and end dates);
2. Completion of training (including training completion or withdrawal);
3. Attainment of an industry/professional certification as a result of training (including credential description, test scores, licensure, attainment of degree or certificate.)
4. Employment Status Prior to training;
5. Employment Attainment at exit/completion of training;
6. Attainment of promotion after completion of training;
7. Employment during training that received a wage increase in first, second, or third quarter after completing training;
8. Change of Employment as the result of training;
9. Unemployment and wage related data;
10. Gender;
11. Ethnicity;
12. Race;
13. Disability Status;
14. Veteran Status;
15. Site Location;
16. Program;
17. Educational Goals;
18. FAFSA (financial aid application) data as needed;
19. Social Security Number (used to capture employment data and award financial aid);
20. Birth date;
21. Permanent and Local Addresses;
22. Phone Number and E-Mail Address; and
23. Income and Household composition.

Purpose of release:

Fulfillment of state and federal reporting requirements for CBJT grant issued to students through the San Bernardino Community College District (SBCCD/ATTC).

I give permission for San Bernardino Community College District (SBCCD/ATTC) to release the specified information to the recipient(s) listed above. I understand that this information is considered part of a student education, financial, and/or housing record. Further, I understand that by signing this release, I am waiving my right to keep this information confidential under the Family Education Rights and Privacy Act (FERPA). I certify that my consent for disclosure of this information is entirely voluntary. I understand this consent for disclosure of information can be revoked by me in writing at any time, but will not affect the information released under my previous consent. If I wish to make any changes to my consent for release, I understand I will need to complete and file a new form.

STUDENT SIGNATURE: **DATE:**

FOR OFFICE USE ONLY: Action taken: [ ] Completed [ ] Filed [ ] Held [ ] Other:_____ BY:_____ Date:_____

WE BELIEVE IN EQUAL OPPORTUNITY

EQUAL OPPORTUNITY IS THE LAW

It is against the law for the Applied Technology Training Center/San Bernardino Community College District (ATTC/SBCCD) as a recipient of Federal financial assistance to discriminate on the following bases:

against any individual in the United States, on the basis of race, color, religion, sex, national origin, age, disability, political affiliation or belief; and

against any beneficiary of programs financially assisted under Title I of the Workforce Investment Act of 1998 (WIA), on the basis of the beneficiary's citizenship/status as a lawfully admitted immigrant authorized to work in the United States, or his or her participation in any WIA Title I-financially assisted program or activity.

The recipient must not discriminate in any of the following areas:

deciding who will be admitted, or have access, to any WIA Title I-financially assisted program or activity;

providing opportunities in, or treating any person with regard to, such a program or activity; or

making employment decisions in the administration of, or in connection with, such a program or activity.

WHAT TO DO IF YOU BELIEVE YOU HAVE EXPERIENCED DISCRIMINATION

If you think that you have been subjected to discrimination under a WIA Title I-financially assisted program or activity, you may file a complaint within 180 days from the date of the alleged violation with either:

the recipient's Equal Opportunity Officer (or the person whom the recipient has designated for this purpose); or

The Director, Civil Rights Center (CRC),
U.S. Department of Labor,
200 Constitution Avenue NW, Room N-4123,
Washington, DC 20210.

If you file your complaint with the recipient, you must wait either until the recipient issues a written Notice of Final Action, or until 90 days have passed (whichever is sooner), before filing with the Civil Rights Center (see address above).

If the recipient does not give you a written Notice of Final Action within 90 days of the day on which you filed your complaint, you do not have to wait for the recipient to issue that Notice before filing a complaint with CRC. However, you must file your CRC complaint within 30 days of the 90-day deadline (in other words, within 120 days after the day on which you filed your complaint with the recipient).

If the recipient does give you a written Notice of Final Action on your complaint, but you are dissatisfied with the decision or resolution, you may file a complaint with CRC. You must file your CRC complaint within 30 days of the date on which you received the Notice of Final Action.

For more information contact: Vice Chancellor
Human Resources & Employee Relations
San Bernardino Community College District
114 S. Del Rosa Drive
San Bernardino, CA 92408
Email address: rbrunell@sbccd.cc.ca.us
Phone number: (909) 382-4041

Print Name:_____

_____ _____
Participant's Signature *Date*

An equal opportunity employer/program
Auxiliary aids/services available upon request for individuals with disabilities
Fax #: 909-382-4003

San Bernardino Community College District
114 S. Del Rosa Dr.
San Bernardino, CA 92408
(909) 382-4012

I, the undersigned, hereby consent to and authorize the use and reproduction by the San Bernardino Community College District and /or its authorized agents, of my image, likeness and /or voice in the production of San Bernardino Community College District, or any of its colleges, KVCR, the Professional Development Center, publicity, whether in print, on video, audio or for a website.

This agreement will remain in effect, without compensation to me, so long as San Bernardino Community College District, or any of its colleges, deems necessary. The original film, prints, negative, tapes and/or soundtracks shall constitute the property of the San Bernardino Community College District, or the college or other district site that created the materials.

_____

Signature Date

_____

Signature of parent or guardian if minor

_____

Print Name

_____

Address City State Zip

_____

Telephone Email address

Date:_____

The Project Director
Nanotechnology Technician's Training Program
114 S. Del Rosa Drive
San Bernardino, CA 92408

Dear Sir:

I would like to attend the Nanotechnology Technician's Training program beginning on _____, 20___ to _____, 20___ and would like to request a waiver of the minimum prerequisite requirements.

Reason(s) for requesting a waiver:_____
_____
_____
_____
_____
_____
_____

I hope for your consideration and immediate favorable response.

Sincerely,

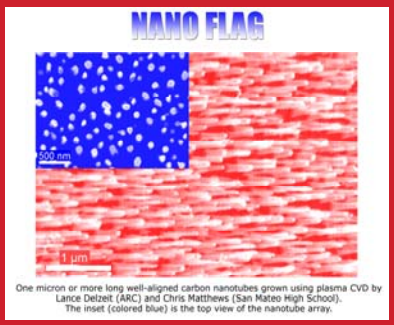
_____
Your Name and signature

The Center for the Advancement of Nanotechnology
(NanoCenter)

Donald F. Averill Applied Technology Training Center
San Bernardino Community College District
114 S. Del Rosa Drive, San Bernardino, CA 92408
(909) 382-4001 Fax - (909) 382-4003

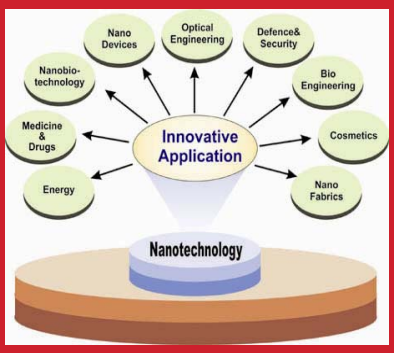
Free Technician's Training in Nanotechnology

Nanotechnology will revolutionize how we manufacture products…



One micron or more long well-aligned carbon nanotubes grown using plasma CVD by Lance Delzeit (ARC) and Chris Matthews (San Mateo High School). The inset (colored blue) is the top view of the nanotube array.

Nanotechnology is not a single technology, it is an enabling technology..



One of our goals is to train and educate our future workforce in this emerging and high growth industry… tomorrow's jobs!

Nanotechnology is the science of manipulating materials at the atomic level to design and manufacture new and better materials and products. One nanometer equals one billionth of 1 meter. A sheet of paper is about 100,000 nanometers thick. Due to quantum mechanical effects at the nanoscale, the physical properties of materials change as well as rules of manufacturing. The Donald F. Averill Applied Technology Training Center (ATTC) of the San Bernardino Community College District won a $2 million competitive grant for Nanotechnology from the U.S. Department of Labor in January 2009. The overall goal of this grant project is to advance the economic development opportunities of Nanotechnology by providing a pipeline of trained workforce and bring about job development and wealth creation in our region. The Nanotechnology training program will consist of 90 hours of hands-on training that introduces participants to nanocharacterization, micro and nanofabrication, materials characterization, device characterization, electronic devices and optoelectronic devices. The Nanotechnology training will be mostly conducted at ATTC and some components of the hands-on training will be held at the Bourns College of Engineering Student Clean Room (Labs) at University of California - Riverside.

PARTICIPANT'S MINIMUM QUALIFICATIONS

You must provide proof that you have attained either one of the following minimum prerequisites:*

- Associate degree in Engineering Technology, Engineering , Biotechnology, Physics, Material Science, Chemistry, Bio-Engineering, Biology, Life Science or related field; **OR**,
- A minimum of 1-year completion of studies **and** 1-year of work experience directly related to any of the fields listed above; **OR**,
- High school diploma or equivalent **and** a minimum of two years work experience directly related to any of the fields listed above. English comprehension and knowledge of entry level math are required.

*****Prerequisites may be waived upon request in writing to the Project Director citing reasons why the minimum requirements should be waived. The Project Director will make the determination and if acceptable provides appropriate recommendation to the instructor for waiver consideration.

NEW TRAINING SCHEDULE: January 9 - March 1, 2012

(Schedule subject to changes. Registration information: Please go to www.attctraining.org)

PARTICIPANT MUST ATTEND ALL SIX COURSES (15 HOURS EACH) TO COMPLETE TRAINING.
You must register for one section only in each course (Section A or B).

NTT01-12: Intro to Electronic Devices
January 9, 10, 11, 12 and 17
Section A: 2:00 p.m. - 5:00 p.m.
Section B: 6:00 p.m. - 9:00 p.m.
ATTC Room 119

NTT02-12: Intro to Micro/Nano Fabrication
January 18, 19, 23, 24 and 25
Section A: 2:00 p.m. - 5:00 p.m.
Section B: 6:00 p.m. - 9:00 p.m.
Room: ATTC Rm. 119 and UCR Lab Facility

NTT03-12: Intro to Optoelectronic Devices
January 26, 30, 31, February 1 and 2
Section A: 2:00 p.m. - 5:00 p.m.
Section B: 6:00 p.m. - 9:00 p.m.
Room: ATTC Rm. 119

NTT04-12: Intro to Nano Characterization
February 6, 7, 8, 9 and 13
Section A: 2:00 p.m. - 5:00 p.m.
Section B: 6:00 p.m. - 9:00 p.m.
Room: ATTC Rm. 119 and UCR Lab Facility

NTT05-12: Intro to Device Characterization
February 14, 15, 16, 21 and 22
Section A: 2:00 p.m. - 5:00 p.m.
Section B: 6:00 p.m. - 9:00 p.m.
Room: ATTC Rm. 119 and UCR Lab Facility

NTT06-12: Intro to Materials Characterization
February 23, 27, 28, 29 and March 1
Section A: 2:00 p.m. - 5:00 p.m.
Section B: 6:00 p.m. - 9:00 p.m.
Room: ATTC Rm. 119 and UCR Lab Facility

This project was funded $2,000,000 (65.4% of its total cost) from a grant awarded under the President's Community-Based Job Training Grants, as implemented by the U.S. Department of Labor's Employment and Training Administration. "The San Bernardino Community College District is an equal opportunity employer/program" and "auxiliary aids and services are available upon request to individuals with disabilities."

Questions and Future Training Schedules? Visit us at www.attctraining.org
Phone: 909-382-4001 E-mail: info@attctraining.org

SCHEDULE OF NANOTECHNOLOGY TECHNICIAN'S TRAINING COURSES
Revised Training Schedule: January 9 – March 1, 2012
(Section A: 2:00 – 5:00 p.m., Section B: 6:00 – 9:00 p.m., Monday – Thursday)

Course: Introduction to Electronic Devices
Course objective/outcome: This course will familiarize students with the principles of various semiconductor electronic devices. At the end of this course, students should be able to know the operation principles of these devices such as diodes, metal oxide semiconductor field effect transistors.
Duration: 15 hours (five 3-hour meetings) – **January 9, 10, 11, 12 and 17**

Course: Introduction to Micro/Nano Fabrication
Course objective/outcome: This course will familiarize students with the principles of various micro/Nanofabrication techniques and provide hands-on nanofabrication experience in a clean room. At the end of this course, students should be able to know the fundamentals of micro/nano-fabrication techniques and carry out general procedures of using clean rooms and micro/nano-fabrication.
Duration: 15 hours (five 3-hour meetings) – **January 18, 19, 23, 24 and 25**

Course: Introduction to Optoelectronic Devices
Course objective/outcome: This course will familiarize students with the principles of various semiconductor optoelectronic devices, such as light emitting diodes, lasers, photodetectors, and solar cells. At the end of this course, students should be able to know the operation principles of these devices.
Duration: 15 hours (five 3-hour meetings) – **January 26, 30, 31, February 1 and 2**

Course: Introduction to Nano Characterization
Course objective/outcome: This course will familiarize students with the principles of various nanoscale characterization techniques and provide hands-on experience of some of these methods such as atomic force microscope (AFM) and scanning electron microscope (SEM). At the end of this course, students should be able to know the fundamentals of the nanoscale characterization techniques and know how to operate state-of-the-art equipment such as AFM and SEM.
Duration: 15 hours (five 3-hour meetings) – **February 6, 7, 8, 9 and 13**

Course: Introduction to Device Characterization
Course objective/outcome: This course will familiarize students with the principles of various semiconductor devices characterization techniques and provide hands-on experience of some of these methods such as current-voltage (I-V) and capacitance-voltage (C-V) characterizations. At the end of this course, students should be able to know the fundamentals of devices and device characterization techniques and know how to operate state-of-the-art equipment such as I-V and C-V.
Duration: 15 hours (five 3-hour meetings) – **February 14, 15, 16, 21 and 22**

Course: Introduction to Materials Characterization
Course objective/outcome: This course will familiarize students with the principles of various semiconductor materials characterization techniques and provide hands-on experience of some of these methods such as X-ray Diffraction (XRD). At the end of this course, students should be able to know the fundamentals of the materials properties and materials characterization techniques and know how to operate state-of-the-art equipment such as XRD.
Duration: 15 hours (five 3-hour meetings) – **February 23, 27, 28, 29 and March 1**