Current and Potential Educational Outreach Options

All the options below use existing systems (except Middle Level Recruiting Initiative) that nanoscience could be integrated into. The ** designates program systems being used now to teach and communicate about nanoscience.

**Elementary**

- **UNL Science Outreach Website** – In process of development with the Math, Science & Computer Science Center- will eventually include all science outreaches at UNL
  [http://scimath.unl.edu/outreach/](http://scimath.unl.edu/outreach/)
- **Resource Website** - Develop as a resource for K-12 – see example - MRSEC site at Wisconsin
  [http://www.mrsec.wisc.edu/Edetc/](http://www.mrsec.wisc.edu/Edetc/)
- **Bright Lights Camp –(Dr. Eva Franke-Schubert)** Develop nanoscience class (summer, 1/2 day for 1 week, 6-8 grade)
- **Project Fulcrum** - K-12 Outreach (grad students partner with LPS science teachers)
  [http://physics.unl.edu/~fulcrum/](http://physics.unl.edu/~fulcrum/)
- **4-H** - After School Programs, Summer Camps, School Enrichment, 4-H Clubs, Special Interest
  [http://4h.unl.edu/](http://4h.unl.edu/)
- **Homeschooling** – Science Classes (Mondays), Tours
- **Lincoln Children’s Museum** - Develop nanoscience presentations for camps/events at museum
  [http://www.lincolnchildrensmuseum.org/aLCM.php](http://www.lincolnchildrensmuseum.org/aLCM.php)
- **UNL Museum**
  Nanodays, Community Learning Centers, Traveling Exhibit, Temp Exhibit in Museum, Career Day, Gallery Programs, Science Kits, Wonderwise Women in Science Kits
  **Sunday with a Scientist** (Ducharme)
  [http://www.museum.unl.edu/education/index.html](http://www.museum.unl.edu/education/index.html)
- **Museum Planetarium** Visual program with nanoscience pictures/narration/music
  [http://www.museum.unl.edu/education/planetarium.html](http://www.museum.unl.edu/education/planetarium.html)
- **UNL Speakers Bureau –(Biniek, Ducharme)** Faculty present science demonstrations at schools and community organizations/events
  [http://speakersbureau.unl.edu/](http://speakersbureau.unl.edu/)
- **Community Learning Centers** - After School Programs
  Lincoln Public Schools and Community Learning Centers provide extension of school curriculum through science programming after school-( 6-8 weeks - 1-2 times week) Tutoring program-paid positions
  [http://www.lincolnclc.org/](http://www.lincolnclc.org/)
- **NET – Nebraska Educational Telecommunications**
  Radio and TV programming throughout Nebraska
  [http://www.netnebraska.org/television/](http://www.netnebraska.org/television/)

**Mid/High School**

- **Big Red Road Shows**
  [http://admissions.unl.edu/road_show/index.aspx](http://admissions.unl.edu/road_show/index.aspx)
EPSCoR - “Young Nebraska Scientist” Camp
Develop Nanoscience classes for middle/high school week long summer camps at UNL
http://yns.nebraska.edu/UNLEMBHSSC.shtml

Resource Website - Develop as a resource for K-12 – see example - MRSEC site at Wisconsin
http://www.mrsec.wisc.edu/Edetc/

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http://scimath.unl.edu/outreach/

**Project Fulcrum - K-12 Outreach (grad students partner with LPS science teachers)
http://physics.unl.edu/~fulcrum/

Homeschooling - Science Classes, Tours
http://www.homeschool-life.com/ne/heartland/

**UNL Museum
Nanodays, Community Learning Centers, Traveling Exhibit, Temp Exhibit in Museum, Career Day, Gallery Programs, Science Kits, Wonderwise Women in Science Kits
**Sunday with a Scientist (Ducharme)
http://www-museum.unl.edu/education/index.html

Museum Planetarium - Visual program with nanoscience pictures/narration/music
http://www.museum.unl.edu/education/planetarium.html

**UNL Speakers Bureau (Binek, Ducharme)- Present science demonstrations at schools and community organizations/events
http://speakersbureau.unl.edu/

Community Learning Centers - After School Programs
Lincoln Public Schools and Community Learning Centers provide extension of school curriculum through science programming after school-( 6-8 weeks - 1-2 times week)
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NET – Nebraska Educational Telecommunications
Radio and TV programming throughout Nebraska
http://www.netnebraska.org/television/
http://www.netnebraska.org/learning/index.htm

**Summer Internships –(Choe) Early recruiting of high potential students starting in 9th grade

Middle Level Recruiting Initiative
Identify high potential science students through UNL camps and Duke TIP program-recruit through campus visits, scholarships, summer internships, Mentorships, Facebook, etc

**Bright Lights Camp –(Dr. Eva Franke-Schubert) Develop nanoscience class (summer,1/2 day for 1 week, 6-8 grade)
http://www.brightlights.org/

Undergraduate

**(REU)Summer Undergraduate Research (many faculty have participated)
http://www.unl.edu/summerprogram/

Nanoscience Undergraduate Minor – add to department offerings

**WoPhy09 Conference – undergraduates in Physics (Enders)
Community Learning Centers - After School Programs (22 schools)
Lincoln Public Schools and Community Learning Centers provide extension of school curriculum through science programming after school- (6-8 weeks - 1-2 times week)
Tutoring program-paid positions
http://www.lincolnclc.org/

**Nebraska Alumni Association Job Bank
Employers that are alumni provide paid student internships
http://www.huskeralum.org/getinvolved/VOB/index.shtml

Graduate

**Project Fulcrum - K-12 Outreach (grad students partner with LPS science teachers)
http://physics.unl.edu/~fulcrum/

Nano Graduate Fellowships - Recruiting tool for high quality students

**Graduate Studies - Talisma Email Campaign (based on GRE list)

Travel Fellowships to conferences

**NCMN Seminars – Guest speakers hosted by NCMN faculty members
http://www.unl.edu/ncmn/seminars.shtml

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Teachers

High School/2-year/4 year Teachers

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http://scimath.unl.edu/outreach/

Math & Science Summer Institutes - Develop summer classes for high school honor students
http://www.unl.edu/scimath/

**(RET) Research Experience for Teachers (Kirby, Ducharme)- Summer Research at UNL
http://www.mrsec.unl.edu/education/RET.shtml

Nanoscience graduate class - Develop credit summer classes for high school science teachers
Chemistry, Physics, Engineering, etc. agree to offer credits for a 2 week session at UNL

UNL Graduate Online Courses – Develop credit nanoscience graduate class online for high school science teachers

**LPS Teacher Professional Development Workshops –(Ducharme) Nanoscience kits and other information to use in classrooms (1/2 day summer workshops held in departments)
http://www.unl.edu/ncmn/outreach.shtml

Inservice Training of Teachers (all public, 2-year, 4 year levels)- Nanoscience area

Inservice Training of Nebraska College Prep Academy teachers
http://admissions.unl.edu/college_prep_academy/summer_research/index.aspx

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http://www.netnebraska.org/television/
http://www.netnebraska.org/learning/index.htm

**College Teachers plus Undergraduate** – Summer Research Experience for Teachers - MRSEC
http://www.mrsec.unl.edu/education/index.shtml

Diversity

High School
- Nebraska College Prep Academy - Summer Science Camp (2 day)
  http://admissions.unl.edu/college_prep_academy/summer_research/index.aspx

Undergraduate
- **WoPhy09 Conference**-(Enders) Physics conference for undergraduates
  http://physics.unl.edu/~wophy/
- **Women in Science** – Conference to explore science careers for women
  http://scimath.unl.edu/csmce/wis.php
- February Forum - Honors outstanding junior and senior women majoring in scientific fields
  http://scimath.unl.edu/csmce/febforum.php
- Freshman class- Develop class (Funding available through Math & Science Center -$10,000/class
- Nano Undergraduate Fellowships – (Funding)

Graduate
- Graduate Fairs (Sacnas, etc.)
- Nano Graduate Fellowships - (Funding)

Post-Doc
- Nano Funds for Post-doc Diversity Recruitment
  Provide funds to attract top tier postdoctoral associates from underrepresented groups

Recruiting

Graduate
- **Talisma Email communications** –Grad Studies advertises NCMN resources along with department emails to undergrads from GRE lists
- Guest Faculty Lectures - at targeted colleges/universities

Mid/High School
- **UNL Science Outreach Website** – In process of development with the Math, Science & Computer Science Center- will eventually include all science outreaches at UNL
  http://scimath.unl.edu/outreach/
- Tours – (Labs, PrairieFire Computer, etc.) Recruit high potential Freshman/Sophmore students partnering with Honors Program and Undergrad Admissions
- Extreme Light Laboratory Tour
  http://www.unl.edu/diocles/
- **Senior News** – email campaign to high school seniors from Undergrad Admissions office
- **Big Red Road Shows**
  http://admissions.unl.edu/road_show/index.aspx
- Summer Internships –(Choe) Early recruiting of high potential students starting in 9th grade
• **Middle Level Recruiting Initiative**
  Identify high potential science students through UNL camps and Duke TIP program- recruit through campus visits, scholarships, summer internships, Mentorships, Facebook, etc

**Technology**

• **Social Networking Tools** – Facebook, Twitter, YouTube, Website, Second Life (Virtual Life/Virtual Campus)

**Community Outreach** – Informal Science Outreach

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    [http://www-museum.unl.edu/education/planetarium.html](http://www-museum.unl.edu/education/planetarium.html)

  ▪ Art in Airports – Nanopicture Displays

  ▪ **Big Red Road Show** –  
    [http://admissions.unl.edu/road_show/index.aspx](http://admissions.unl.edu/road_show/index.aspx)

  ▪ **UNL Speakers Bureau (Binek, Ducharme)**- Present science demonstrations at schools and community organizations/events –  
    [http://speakersbureau.unl.edu/](http://speakersbureau.unl.edu/)

  ▪ **Nebraska Alumni Association Job Bank**  
    Employers that are alumni provide paid student internships  

  ▪ **Science Cafes** – informal conversation with a scientist about current science topics in casual settings like pubs and coffeehouses  
    [http://www.unmc.edu/sciencecafe/index.htm](http://www.unmc.edu/sciencecafe/index.htm)

  ▪ **Osher Lifelong Learning Institute Lectures** – designed for lifelong learners 50 years plus  
    [http://cehs.unl.edu/olli/](http://cehs.unl.edu/olli/)