



# UTAH

## Sciences & Life Sciences Achievement

### STUDENT ACHIEVEMENT

NAEP Grade 8	UT	U.S. Avg.	State Rank
Science Average, 2005	153.7	147.1	18
Science, 2005 (% at or above "proficient")	33.1%	27.3%	17
Life Sciences Average, 2005	151.7	148.2	23

ACT	UT	U.S. Avg.	State Rank
Science Average, 2008	21.6	20.8	18
Biology, 2008 (% of students ready for college level)	32%	28%	20

AP	UT	U.S. Avg.	State Rank
Science Scores, 2008 (% with a score of 3 or higher)	54.7%	55.4%	29
Science Exams, 2008 (Exams as % of all H.S. grads)	9.5%	10.5%	22
Biology Scores, 2008 (% with a score of 3 or higher)	46.4%	49.8%	30
Biology Exams, 2008 (Exams as % of all H.S. grads)	5.0%	4.6%	18

### SCIENCE TEACHER QUALITY and PROFESSIONAL DEVELOPMENT

	UT	U.S. Avg.	State Rank
Science Teachers with Major in Assigned Field, 2003–04 (% , Grades 7–12)	77%	77%	21
Science Teachers Certified, 2006 (% , Grades 7–8)	81%	N/A%	13
Biology Teachers Certified, 2006 (% , Grades 9–12)	90%	88%	21

**Note:** NAEP = National Assessment of Educational Progress, AP = Advanced Placement  
N/A = Data not available.

## Examples of Bioscience Education Activities

### Teacher Preparation and Professional Development

Through the **Utah Science Technology and Research (USTAR) Centers program** at the Utah State Office of Education, school districts and charter schools can apply on a competitive basis to provide an extended, full-year contract for science, technology, engineering, and mathematics (STEM) teachers, which can be

## UT STATE SCIENCE STANDARDS & REQUIREMENTS

### STANDARDS PROFILE

- Most recent update of K-12 Science Standards: **2003**
- Science standards specifically mention applied laboratory or other tools for biotechnology or biosciences. The standards describe the biology core curriculum as relevant because it "provides students with an opportunity to investigate careers in genetics, biotechnology..."

*Utah State Office of Education, Secondary Core Curriculum, April 2003*

### BIOSCIENCE-RELATED GRADUATION REQUIREMENTS:

Biology is not included as part of science requirement



used for professional development, extended student learning, course development, or other activities.

The **Genetic Science Learning Center at the University of Utah** delivers educational material for teachers and students through its Learn Genetics Web site (<http://learn.genetics.utah.edu>) and additional professional development for K-12 teachers through its Teach Genetics Web site (<http://teach.genetics.utah.edu>). The Center also offers on-site programs for both constituencies.

#### **Experiential Learning and Outreach**

The University of Utah offers an annual **Science Day** in which sophomores, juniors, and seniors are invited to campus to attend a full day of science-related workshops.

Utah Science Center and University of Utah collaborate on the **Salt Lake Valley Science and**

**Engineering Fair**, targeted at students in grades 5 through 12.

**Salt Lake Community College's InnovaBio**, an academic, contract-research organization, allows Utah's biotechnology industry to develop new products or test new ideas using a state-of-the-art biotech lab staffed by qualified scientists and student interns, including those at the high school level.

Utah offers a **MESA (Mathematics, Engineering, Science Achievement) program** targeted at underrepresented minorities and female students, operating as a partnership between the University of Utah and participating districts.

#### **Bioscience-focused Schools and Programs**

Five of the Utah Charter Schools are science academies



## Basic Skills Achievement and Other Summary Metrics

### STUDENT ACHIEVEMENT

NAEP Grade 8	UT	U.S. Avg.	State Rank
Math Average, 2007	281.1	280.2	30
Math, 2007 (% at or above "proficient")	32.4%	31.0%	27
Reading Average, 2007	262.2	261.0	29
Reading, 2007 (% at or above "proficient")	30.1%	29.2%	28
Writing Average, 2007	152	154.3	31
Writing, 2007 (% at or above "proficient")	30.5%	30.6%	23

ACT	UT	U.S. Avg.	State Rank
Percentage of Graduates Tested	68%	43%	18
Math Average, 2008	21.1	21.0	33
Reading Average, 2008	22.5	21.4	15
English Average, 2008	21.4	20.6	20

SAT	UT	U.S. Avg.	State Rank
Percentage of Graduates Tested	6%	48%	42
Math Average, 2008	557	515	18
Critical Reading Average, 2008	561	502	20
Writing Average, 2008	543	494	19

AP	UT	U.S. Avg.	State Rank
Math Scores, 2008 (% with a score of 3 or higher)	71.1%	65.2%	13
Math Exams, 2008 (Exams as % of all H.S. grads)	10.6%	8.7%	10
English Scores, 2008 (% with a score of 3 or higher)	67.2%	59.2%	13
English Exams, 2008 (Exams as % of all H.S. grads)	16.1%	18.9%	24

### SUMMARY STATE EDUCATION METRICS

Selected Indicators	UT	U.S. Avg.	State Rank
High School Graduation Rate, 2005–06	78.6%	73.4%	20
Student/Teacher Ratio, 2006–07	22.1	15.5	51*
Low-income Students, 2006–07 (% of all students)	30.9%	41.6%	–
Expenditure per Student (\$), 2005–06	\$5,464	\$9,154	51

**Note:** NAEP = National Assessment of Educational Progress, AP = Advanced Placement  
N/A = Data not available. \* Lowest value receives highest ranking.

#### TABLE SOURCE NOTES:

**NAEP Assessments, grade 8:** U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES), National Assessment of Educational Progress (NAEP), 2005; **ACT Exam:** ACT, Inc., 2008; **SAT Reasoning Test:** The College Board, 2008.

**Advanced Placement (AP):** Battelle analysis of data from the College Board, 2008; AP test takers as a share of high school graduates includes graduate data from U.S. Department of Education, NCES for both public (Common Core of Data) and private high schools (Private School Survey).

**Science Teacher Indicators:** Council of Chief State School Officers (CCSSO) analysis of State Departments of Education data on public schools, 2007; U.S. Department of Education, NCES Schools and Staffing Survey, 2003–04 as reported by CCSSO, 2007.

**Summary State Education Metrics:** U.S. Department of Education, National Center for Education Statistics (NCES), Common Core of Data (CCD) on public elementary and secondary education.

**Note:** High school graduation rates are averaged freshman graduation rates—the rate is the number of graduates divided by the estimated count of freshmen 4 years earlier. U.S. figure for share of students eligible for free or reduced-price school lunch ("low-income" students) is available for 2005–06 only (state data are for 2006–07).

