

NEWS in Science and Technology *from the*



CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING

Vol. 1, No. 2 / Summer 2002

The following is an Executive Summary of the Academy's quarterly Bulletin (Vol. 17,2) that includes topics and issues in science and technology deemed by the Academy to be both timely and relevant to Connecticut's interests. Online versions of this newsletter and the Bulletin are available on the Academy website at www.ctcase.org.

HEALTH

➤ Bulletin Feature Article: Advances in Stem Cell Research Hold Promise for Disease Therapies

Adult stem cells, as well as embryonic stem cells, have potential use in cancer treatments.

- Yale biologist Diane Krause found that:
 - Adult bone marrow stem cells could produce many types of cells.
 - Research on both adult and embryonic stem cells for therapeutic purposes should be pursued, as each will have benefits for different applications.
- At UConn's Transgenic Animal Facility, Xiangzhong "Jerry" Yang's research on cloning and the therapeutic use of embryonic stem cells has shown:
 - That clones could be generated from skin cells, as well as from female reproductive tissue.
 - Several advantages to use of skin cells:
 - Much less invasive to obtain.
 - Can be cultured easily for long periods of time, making cells better at producing healthy clones.
 - Clinical applications of this technology now much closer.

[\[www.ctcase.org/bulletin/cloning_long.pdf\]](http://www.ctcase.org/bulletin/cloning_long.pdf)

➤ Smallpox Recommendations

An Institute of Medicine Advisory Committee on Immunization Practices (ACIP) approved draft recommendations supplemental to its findings of June 2001 that call for:

- Isolation of confirmed smallpox cases.
- Targeted vaccination of only those who have been in contact with infected individuals.
- Mass vaccinations only if the initial vaccination and quarantine methods are unsuccessful.
- Clarification and expansion of primary strategy for control and containment in the event of an outbreak.

[\[www.cdc.gov/nip/smallpox/supp_recs.htm\]](http://www.cdc.gov/nip/smallpox/supp_recs.htm)

EDUCATION & COGNITION

➤ Racial, Ethnic Disparities in Special, Gifted Ed

A new National Research Council report indicates that:

- A disproportionate number of children in some racial/ethnic groups are being identified with disability labels and placed in special ed programs.
- Educators should provide minority students with high quality instruction and social support in a regular setting before determining if special services are needed.
- States should strengthen training requirements for prospective and current teachers to enable them to meet needs of atypical learners.
- Government officials should improve and expand early childhood services, including universal screening and intervention strategies in reading and behavior.
- Rigorous research should be done to identify minority students who have special gifts and talents to address the historically disproportionately low numbers that are placed in K-12 gifted classes.

[\[www.nap.edu/books/0309074398/html/\]](http://www.nap.edu/books/0309074398/html/)

TRANSPORTATION

➤ Air Quality on Airplanes

A National Research Council report on commercial aircraft air quality finds:

- Excessive ozone levels in aircraft may worsen respiratory ailments.
- Low cabin pressure associated with cruise altitudes may pose risks to infants and some adults.
- Data shortage impedes study of poor air quality vs. health concerns. FAA requested to correct information deficit.
- FAA urged to conduct investigation to assure that its air quality standards are adequate to protect public health.

[\[www.nap.edu/books/0309082897/html/\]](http://www.nap.edu/books/0309082897/html/)

(continued on page 2)

TRANSPORTATION continued

➤ Ratings and Rollovers

The National Highway Traffic Safety Administration (NHTSA) has implemented a five-star rating system in its New Car Assessment Program, based on a top-heaviness measurement called the static stability factor, or SSF. A new Research Council Report:

- Finds SSF useful in determining propensity for vehicle rollover, but of limited practical use.
- Recommends development of a rating system using SSF plus information from road tests, thus providing better rollover guidance information to the public.

Our Thanks to Academy Sponsors

The Academy wishes to express its sincere thanks to all of its sponsors, whose support makes the important work of the Academy, including this publication, possible.

Special recognition and thanks for continuing support of the Academy's programs to the Connecticut Department of Economic and Community Development

◆ Leading Patrons ◆

Northeast Utilities • Pfizer • Praxair • United Technologies

◆ Sustaining Patrons ◆

Boehringer Ingelheim

◆ Contributing Patrons ◆

BHC • Pitney Bowes • Schlumberger-Doll Research • Southern New England Telephone • The Stanley Works

◆ Patrons ◆

Olin • Vion Pharmaceuticals

- NHTSA currently developing dynamic tests for vehicle rollover.

[www.nap.edu/catalog/10308.html?infocus_2.1]

GENERAL

➤ A Blueprint for Saving Lives

In a terrorist attack, building blast resistance equates to lives saved. A National Research Council committee:

- Urges Defense Threat Reduction Agency (DTRA) to increase sharing of findings and innovations from its blast-effects research program with civilian building community.
- Requests DTRA to develop assessment tools and design guides that will help designers evaluate risks of building designs so that features are incorporated to minimize damage.
- Suggests Federal government set up rapid-response teams to gather bomb-blast effects information to help builders prevent, and medical and rescue personnel respond to, future attacks.

[www.nap.edu/books/0309082862/html]

You have been selected to receive this newsletter because of your role in science and technology policy-making in Connecticut. If you are aware of other individuals who might benefit from this publication, please contact the Academy at (860) 527-2161 or by email at acad@ix.netcom.com

NEWS in Science and Technology

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING

179 Allyn Street

Hartford, Connecticut 06103-1422