



September 2008

### Biotech News

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#### SBE's BioSupplements to *Chemical Engineering Progress*:

- Biobutanol – A Replacement for Bioethanol? *Ron Cascone, Nexant.*
- Producing Fuels and Chemicals from Lignocellulosic Biomass, *Rocio Sierra, Aaron Smith, Cesar Granda, and Mark Holtzapple, Texas A&M.*
- Metabolic Engineering of Next-Generation Biofuels, *James Liao and Wendy Higashide, University of California, Los Angeles.*

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**Please congratulate AICHE Member Adam Heller, research professor and professor emeritus at the University of Texas at Austin, for receiving the National Medal of Technology in Innovation.** He and his son founded TheraSense, a company that developed a revolutionary approach to the glucose measurement process that changes biochemical concentrations to electrical signals and thereby allows for easier blood glucose monitoring for people with diabetes. The company was bought by Lilly in 2002. Dr. Heller described the innovation during AICHE's 2004 Institute Lecture.

#### Other News

- AICHE member Christina Smolke and colleagues add several plant enzyme genes to yeast to produce reticuline, a precursor of many classes of benzyloquinoline alkaloid molecules such as morphine, codeine and other medically important compounds, usually only produced at low concentrations in plants.  
[http://mr.caltech.edu/media/Press\\_Releases/PR13175.html](http://mr.caltech.edu/media/Press_Releases/PR13175.html)
- Biologists combine fluorocarbon labeling and MRI technology to develop a novel non-invasive way to locate, quantify and track cells within the body that is especially relevant for gauging immune cells' role in disease and therapeutics.  
[http://www.cmu.edu/news/archive/2008/August/aug21\\_mritechnology.shtml](http://www.cmu.edu/news/archive/2008/August/aug21_mritechnology.shtml)
- Irreversible electroporation technology for treating cancer gets further support for its advancement from the Wallace H. Coulter Foundation and Wake Forest Comprehensive Cancer Center.  
<http://www.vtnews.vt.edu/story.php?relyear=2008&itemno=483>
- AICHE member Umit Ozkan of Ohio State University develops a cheap, new cerium oxide catalyst to convert liquid fuels to hydrogen at a 90% yield and relatively low temperatures.  
<http://researchnews.osu.edu/archive/biohydro.htm>
- Byogy licenses Texas A&M University process for converting biomass to high-octane gasoline using biomass waste streams and non-food energy crops, and plans to build

a working plant within the next two years.

[http://www.biomassmagazine.com/article.jsp?article\\_id=1963](http://www.biomassmagazine.com/article.jsp?article_id=1963)

- The Environmental Protection Agency is convening a workshop with the National Academy of Sciences on December 11-12 to advise on methods for screening and prioritizing pharmaceuticals to determine the potential risk to human health from low levels of pharmaceutical residues in drinking water. You can fill out the EPA's questionnaire about pharmaceutical disposal to inform future potential regulatory actions and identify best management and disposal practices. The deadline is November 10. More information is available at: <http://www.epa.gov/waterscience/>

## Society News

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**SBE is proud to announce the winner of its James E. Bailey Award**, endowed by [Cytos Biotechnology](#) –Professor James Swartz for his research and advancements in cell-free technologies. Dr. Swartz is the Leland T. Edwards Professor at the Stanford School of Engineering and a member of the National Academy of Engineering. He is also a founder of Fundamental Applied Biology, Inc., a new company dedicated to developing commercial cell-free technologies. His research seeks to reproduce and direct complex metabolism in a cell-free environment. Applications include pharmaceutical protein production, patient-specific cancer vaccines, improved vaccine architectures, biological hydrogen production from sunlight, and advanced water purification technology based on aquaporins. Professor Swartz will give his award lecture at the American Institute of Chemical Engineers' Annual meeting on Tuesday, November 18 at 6:30 – 7:30 pm. The title of his talk is "Look, Mom, NO CELLS! Providing New Freedom for Engineering Efficient Biological Systems."

Mark your calendar for additional, bio-related events during the **AIChE's Annual Meeting** on November 16-21, 2008, in Philadelphia, PA:

- **SBE's Hospitality Suite**, *sponsored by Merck Research Laboratories*. This suite is free for SBE members. Join SBE now at <http://www.aiche.org/apps/ecommerce/bio/index.asp>
- **Biology for Chemical Engineers**, a technical course designed to provide knowledge and tools for today's chemical engineers who are new or aspiring to practice biotechnology, on Sunday, November 16, 8:00am - 5:00pm. To find out more or register, please go to <http://www.aiche.org/SBE/Education/Courses.aspx>.
- **Professional Progress Award Lecture: Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs**. Speaker Jay Keasling will highlight his engineering of bacteria and yeast for high-level production of isoprenoids, the precursor for anti-malaria drug Artemisin. Tuesday, November 18, 2008, 11:15am - 12:15pm. Marriott Philadelphia Downtown Salon G/H.
- **America's Energy Future: Alternative Liquid Transportation Fuels: Technology Opportunities, Risks, and Tradeoffs**. Keynote speakers will highlight the availability of biomass and the technologies enabling its thermochemical and biochemical conversion into energy. Monday November 17, 2008, 3:00-5:00pm.

SBE will soon be holding an election for its Managing Board, as board members complete the third year of their term. If you would like to nominate a candidate for consideration by the Election Committee, please email us at [bio@aiiche.org](mailto:bio@aiiche.org) with the candidate's name.

## SBE and Other Events

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**SBE's "Science and the Emerging Bioeconomy,"** an executive course on December 3-5, 2008 at the Hyatt Regency Scottsdale Resort and Spa in Scottsdale, organized by Doug Cameron, Managing Director and Chief Science Advisor of Piper Jaffray, and Michael Ladisch, CTO of Mascoma Corporation. Find out more or register at <http://www.aiche.org/BioExecEd>.

**Call for Papers — SBE's 2nd International Conference on Biomolecular Engineering (ICBE),**

January 18-21, 2009 at the Fess Parker Doubletree Hotel in Santa Barbara, CA. The conference is the premier biomolecular engineering conference, attracting leading authorities that use quantitative approaches to advance the understanding and application of biology at the molecular level. Keynote speakers include:

- **Jay Keasling**, *Chief Executive*, Joint BioEnergy Institute, University of California, Berkeley
- **Peter Schultz**, *Scripps Professor of Chemistry*, The Scripps Institute, and Institute Director of the Genomics Institute of the Novartis Research Foundation
- **James Wells**, *Harry William and Diana V. Hind*, Distinguished Professorship in Pharmaceutical Sciences, University of California, San Francisco

Submit an abstract or find out more at [www.aiche.org/ICBE](http://www.aiche.org/ICBE). The abstract deadline closes on October 17, 2008

**Save the Date for SBE's 2nd International Conference on Accelerating Biopharmaceutical Development**, on March 9-12, 2009 at the Marriott Coronado Island Resort in Coronado, CA. To receive more information, go to [www.aiche.org/AcceleratingBio](http://www.aiche.org/AcceleratingBio).

**Register now for Accelerating Innovation in 21st Century Biosciences: Identifying the Measurement, Standards and Technological Challenges** at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD on October 19-22, 2008. The workshop proceedings will be used to help write the "NIST Strategic Plan for Biosciences Program Growth" that will be reported to Congress and used by the Presidential transition teams. For a list of speakers and topics visit <http://www.cstl.nist.gov/Biosciences.html>

A complete bio-event calendar can be found at <http://www.aiche.org/SBE/Events/index.aspx>

### Join Now

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Not a current SBE member? It's never too late to join or renew. Costs are \$75 for regular members, \$25 for graduate students, \$10 for AIChE, ACS and IBE members, or free for undergraduates. Join now at <http://www.aiche.org/apps/ecommerce/bio/index.asp>.

#### Member benefits include:

- Subscription to SBE's semi-annual BioSupplement to Chemical Engineering Progress.
- Discounts on leading biological engineering conferences including SBE and SBE cosponsored meetings and courses.
- Access to online membership directory.
- A voice in education, employment and technology advancement topics.

### Comments?

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SBE's *e-Connections* is edited by Adrian Andrew Fay, Web Science Editor, with input from SBE staff. Contact us at [bio@aiiche.org](mailto:bio@aiiche.org)

*The Society for Biological Engineering (SBE) is a new technological community of AIChE. Its mission is to promote the integration of biology with engineering and realize its benefits through bioprocessing, biomedical, and biomolecular applications. For comments and contributions to SBE Connections, email <mailto:bio@aiiche.org>*