

UNIVERSITY OF MINNESOTA



SUSTAINABILITY AND U }

Advancing our Sustainability Efforts

*Board of Regents
Facilities Committee
June 12, 2008*



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Sustainability Efforts Update

- Policy Overview
- President Bruininks Charge to the University of Minnesota Sustainability Goals and Outcomes Committee
- Signing of the American College and University Presidents Climate Commitment
- Sustainability and U Report, 2008



Board of Regents Policy

I. Commitment:

- Environmental, social and economic goals through design, planning and operational organization
- Entire U community, balanced use of resources, within budgetary constraints
- Incorporation into teaching, research, outreach & operations

II. Guiding Principles

III. Implementation



Board of Regents Policy

I. Commitment

II. Guiding Principles

1. **Leadership** – U will strive to be a world leader
2. **Modeling** – aspire to exceed regulations, preventing pollution, reducing emissions, life-cycle cost framework
3. **Operational Improvements** – continuous improvement
4. **Energy Efficiency** – increase energy efficiency, reduce non-renewable energy use, encourage alternatives
5. **Research** – promote research to inform campus operations and community, collaboration between research and operations
6. **Education and Outreach** – link to operational innovation

III. Implementation



Board of Regents Policy

I. Commitment

II. Guiding Principles

III. Implementation

1. **Administration** – development of administrative policies and procedures
2. **Operations** – campus-specific objectives for development, operations, transportation, purchasing, waste management
3. **Accountability** – development of performance measures
4. **Reporting** – progress toward targets reported to Board of Regents



President's Charge to University-Wide Sustainability Goals & Outcomes Committee

Facilitate Implementation of the Regents Policy by:

- Recommending University-wide sustainability goals aligning to the guiding principles
- Drafting performance measures and appropriate mechanisms for reporting progress
- Supporting each campus's sustainability efforts and ensure their operations achieve system wide equivalency in objectives and targets.



U-Wide Sustainability Goals and Outcomes Committee Membership

- Kathleen O'Brien, VP University Services, *co-chair*
- Deborah Swackhamer, Interim Director, Institute on the Environment, *co-chair*
- David DeMuth, Prof and Head, Math, Science and Technology, UMC
- Kris Johnson, Graduate student
- Holly Lahd, Undergraduate student
- Anne Kapuscinski, Prof, Dept of Fisheries, Wildlife and Conservation Biology and Director, *ISEES*
- Scott Lanyon, Prof, Dept. of Ecology, Evolution, and Behavior, and Director, Bell Museum
- Allen Levine, Dean and Professor, CFANS
- Julian Marshall, Assist. Prof, Civil Engineering
- Lance Neckar, Interim Dir, Metro Design Center and Prof, Landscape Architecture
- Steve Polasky, Professor of Ecological/ Env Economics
- Elizabeth Wilson, Asst Prof of Energy and Environmental Policy and Law
- Leslie Bowman, Director, University Dining Services
- Jim Dudley, Director of Central Services, FM
- John King, Director, Facilities Management, UMD
- Jerome Malmquist, Dir of Energy Management, FM
- Andy Phelan, Assistant Director, EHS
- Lowell Rasmussen, AVC, Plant Services and Master Planning, UMM
- Brian Swanson, Budget Officer, Budget and Finance
- Amy Short, Sustainability Coordinator, U Services, Staff



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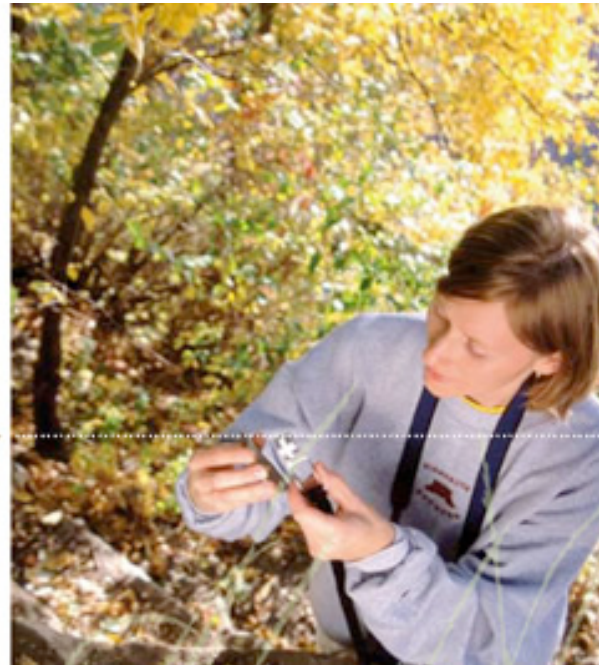
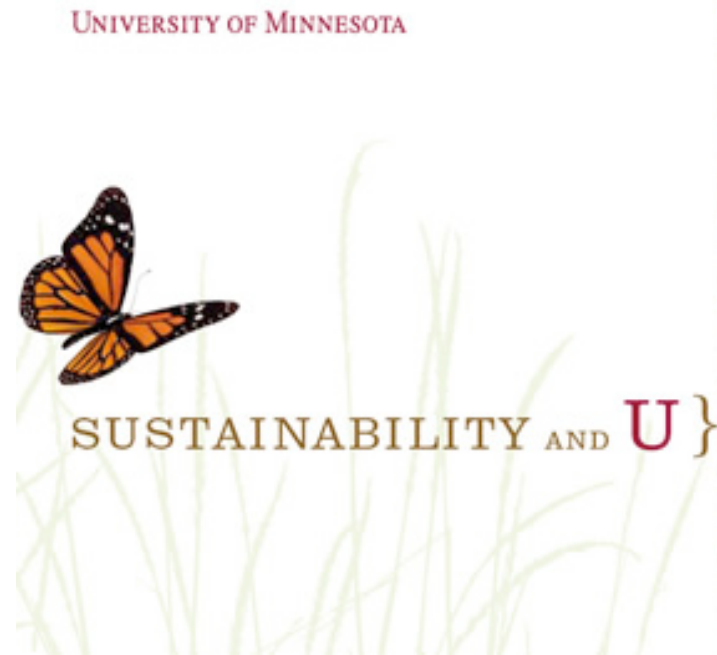
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American College and University Presidents Climate Commitment

- President Bruininks signed the commitment in January 2008.
- To date, there are more than 550 Signatories
- Establish an institutional structure by March 2008 to oversee development of an action plan by January 2010; oversee implementation of the plan to become carbon neutral by an established target date.
- Complete a greenhouse gas inventory by January 2009
- Choose and implement interim tangible measures.
- Publicly report progress



Sustainability and U - 2008



- Leadership
- Modeling
- Operational Improvements
- Energy Efficiency
- Research
- Education and Outreach

<http://www.uservices.umn.edu/sustainableU/index.html>



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Leadership: Chicago Climate Exchange Membership

- World's first and North America's only voluntary, legally binding trading system to reduce all six major greenhouse gas emissions, with projects worldwide.
- Includes corporations, such as: Dow Corning, Dupont, Ford Motor Co., IBM
- Members commit to reduce emissions by 1% per year below 1998-2001 baseline - 4% reduction below baseline in 2006, and 6% by 2010.
- In 2006, U achieved 38.6% reduction below baseline



Leadership: Institute on the Environment

INSTITUTE ON THE
ENVIRONMENT



- Result of Strategic Positioning Interdisciplinary Initiative
- Objectives:
 - To identify, organize, and support collaborative interdisciplinary research teams to develop and disseminate innovative and practical solutions to the most pressing environmental problems of our era.
 - To facilitate and coordinate environmental programs, activities and courses, and disseminate relevant information on environmental research and expertise of the University of Minnesota system



Modeling: Green Construction

- Pursuing LEED certification on:
 - the new 50,000-seat TCF Bank Stadium.
 - Science Teaching and Student Services Building
 - New Bell Museum of Natural History.
- The University follows the State of Minnesota's Sustainable Building Guidelines, which adapt the LEED building policy to specific regional issues, resulting in the equivalent of a LEED Certified rating.



Operations: University Dining Services

- Green Dining Rooms
 - Use of Recycled materials such as napkins
 - 30% of packaging are biodegradable, including fountain drink cups and straws
 - Used cooking oil donated for bio-diesel products
 - Green Team Internships
- Purchasing:
 - Partnership with Midwest Food Alliance
 - Local produce and dairy
 - Organic produce and cage free eggs
 - Fair Trade coffee

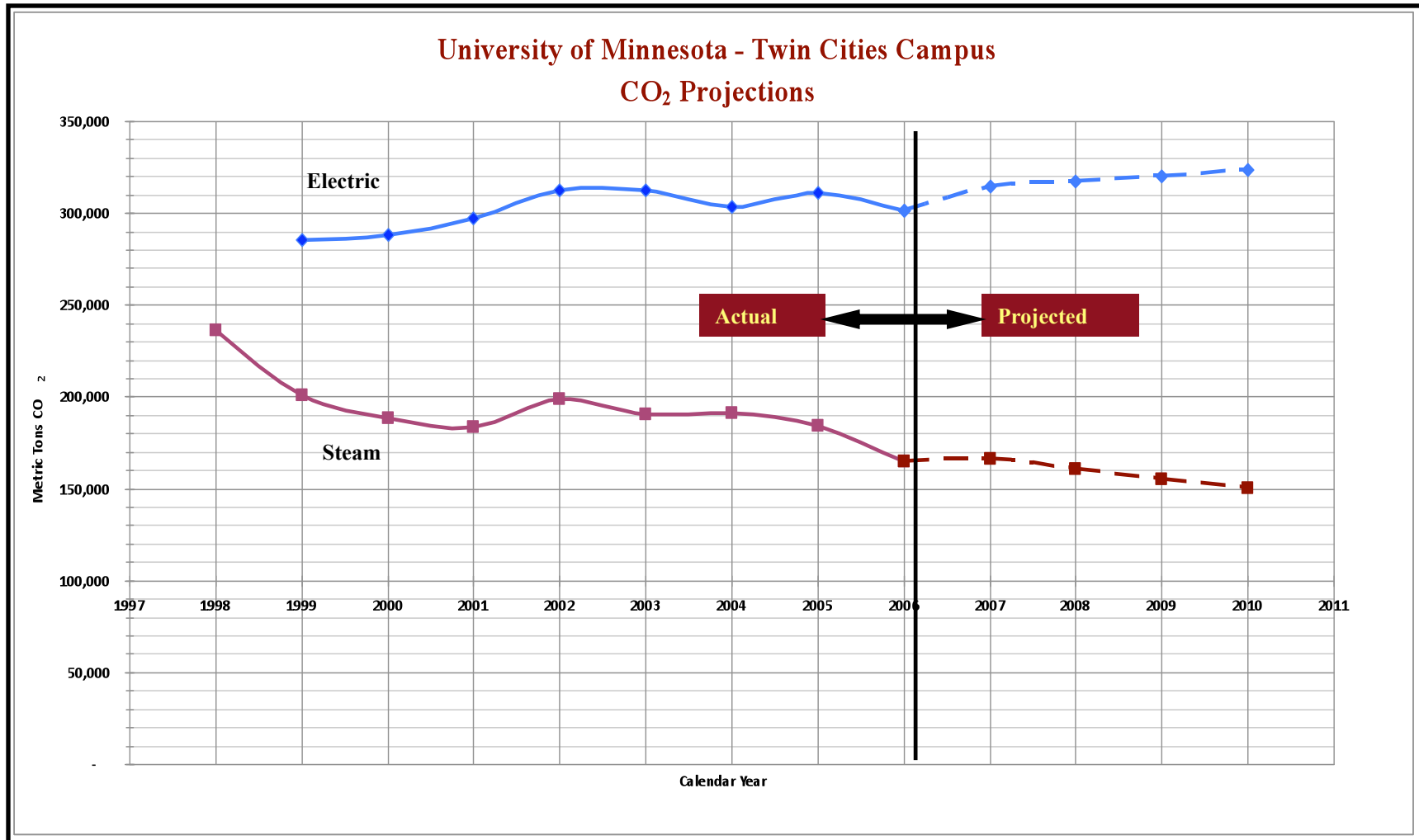


Operations: University Dining Services - Composting

- University of Minnesota – Twin Cities, a leader in composting food service organics
- Placed 2nd out of 400 participating schools in a national competition called RecycleMania.
 - UDS with Facilities Management, Residential Living and Green Team made Recycle Mania successful.
- Compost program pilot initiated Sept 2007
 - 217 tons composted 2007-8 academic year
 - Includes food and biodegradable packaging
 - Composting facility at St. Paul campus.



Energy Efficiency: Carbon Dioxide Emissions



Research: Algae-to-Biofuels



In Partnership with:

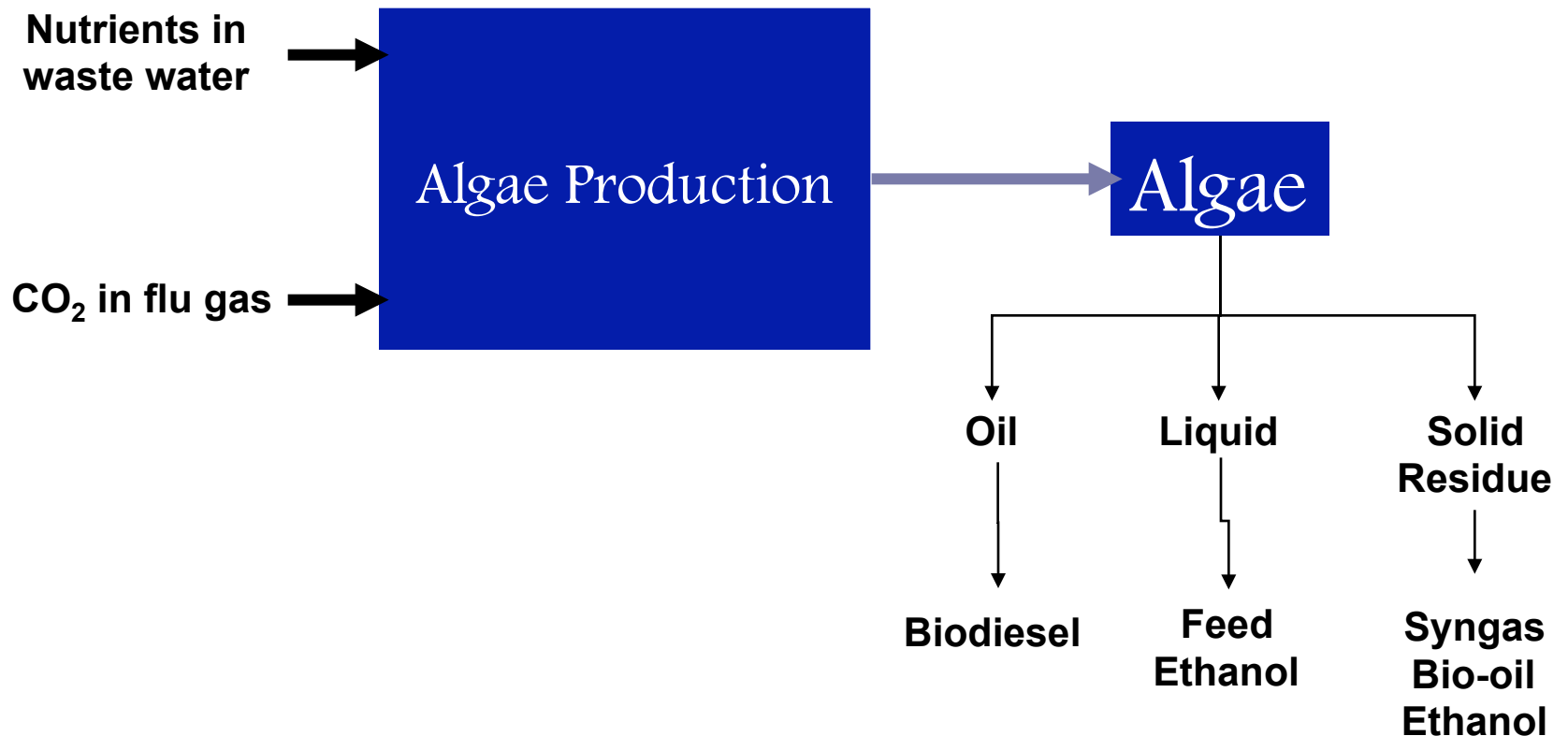
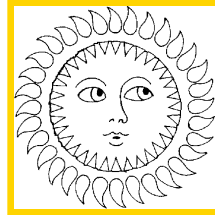
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Algae to Biofuels: Clean Technologies

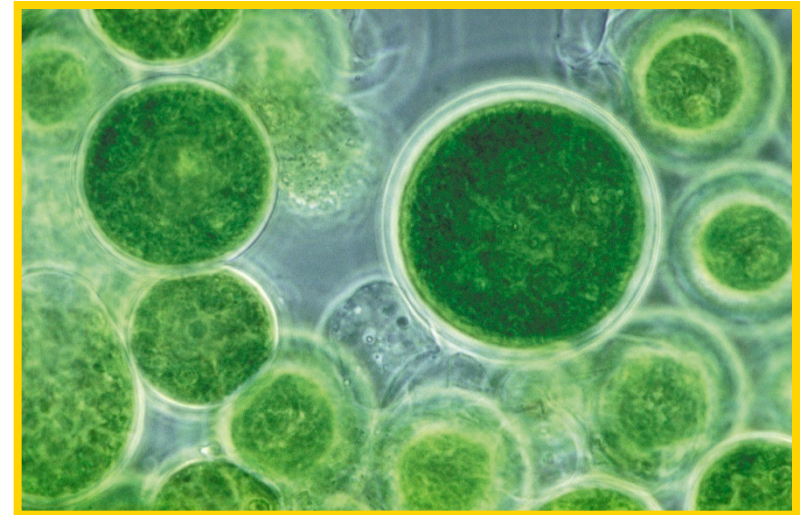


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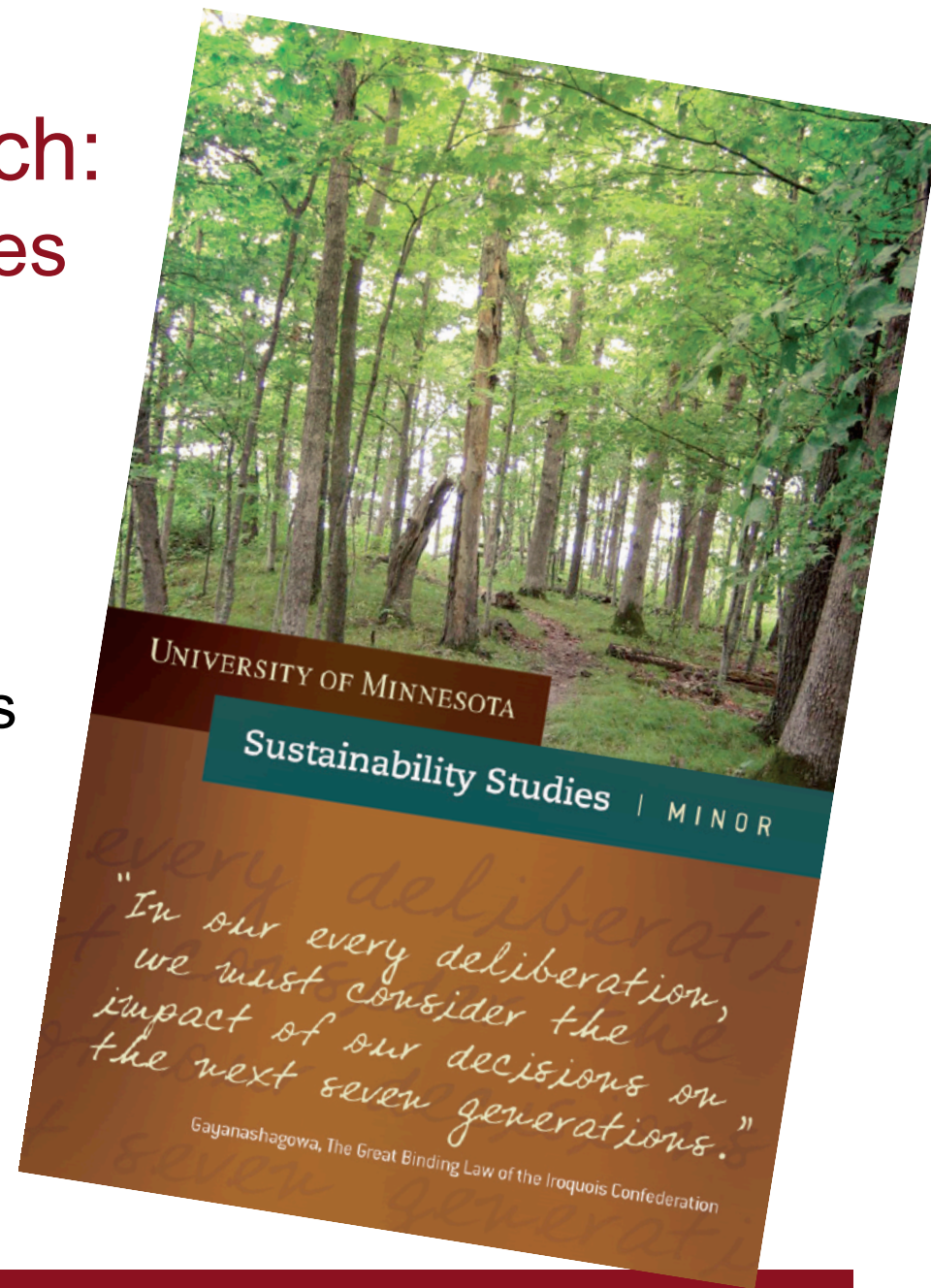
Why Microalgae?

- Much greater productivity than their terrestrial cousins
- Non-food resource
- Use otherwise non-productive land
- Can utilize saline water
- Can utilize waste CO₂ streams
- Can be used in conjunction with waste water treatment
- An algal biorefinery could produce oils, protein, and carbohydrates
- High oil content algae species: Above 50%, some as high as 75%



Education and Outreach: new Sustainability Studies Minor

- One of 1st interdisciplinary undergraduate programs in Sustainability in the country
- **170** students in core courses
- **70** students from nearly **20** majors in the Minor
- Involves **dozens** of faculty from **7** colleges
- Capstone projects in partnership with U Services
- Featured in Chronicle of Higher Education, and highlighted recently by President of AASHE



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Next Steps

- U-Wide Sustainability Goals and Outcomes Committee
 - Workplan is being developed
 - Each campus is forming a Sustainability Committee for implementation locally
 - President Climate Commitment requirements and reporting are to be integrated
 - University Services Sustainability Steering Committee is developing operation goals
- University Engagement



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