

Arizona State University
Polytechnic

Tuesday 22 April 08
Cooley A at MU, 3 pm



Biowar I: Burning Food for Fuel Leads to World Hunger Solution: Sustainable Algae Biotechnology for Food and Biofuels

Mark Edwards, Professor
Morrison School of Management and Agribusiness
Plus Algae Lab Tour — Lab for Algae Research and Biotechnology, LARB

Sustainable algae solutions for our hungry, thirsty and needy world.

Arizona is positioned to become Algae Central because algae need:

- Maximum days of warmth and sunshine — we have about 360 each year
- Non-populated, non-crop land — we have hundreds of miles of desert
- Salty, brine or wastewater — we have huge reserves of underground brine water
- Technically trained people — we have excellent Community Colleges and Universities

Algae-based solutions:

- Global hunger
- Global warming
- Deforestation
- Biofuels
- Commercial algae production
- Cleaning polluted water
- Medicines and vaccines
- Pharmaceuticals
- Animal feed
- Fertilizers
- Colorings, emulsifiers
- Health foods, nutrients
- New algae products

Meet Key Faculty:

Milton Sommerfeld

Professor, Department
of Applied Biological
Sciences

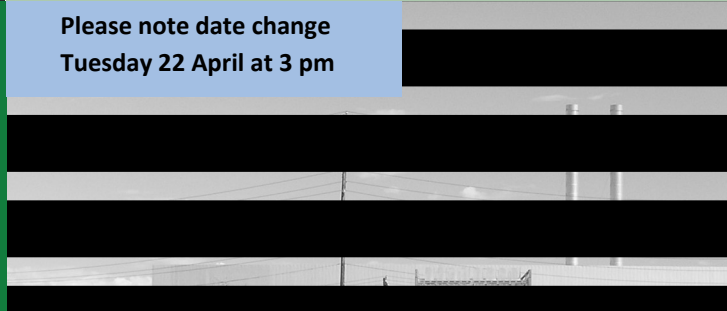
Hu Qiang

Associate Professor,
Department of Applied
Biological Sciences

Mark Edwards

Professor, Morrison
School of Management
and Agribusiness

Please note date change
Tuesday 22 April at 3 pm



Algae Collaboratory

www.AlgaeLab1.com

The Collaboratory broadens core algae solutions from the Laboratory for Algae Research and Biotechnology, LARB, to a **social network** designed to engage global collaborators for R&D on scale-up of commercial algae production. AlgaeLab1 acts to enhance algae characteristics such as high value oils, carbohydrates and proteins and to reduce production and processing costs.

Why algae? Imagine a **food and biofuel** solution that:

- Does not compete with food crops for land and precious water
- Makes polluted, saline and wastewater clean enough to use for irrigation
- Creates a positive ecological footprint with minimal waste and lots of O₂
- Grows in a wide range of temperature zones and altitudes
- May be produced on a small, medium or commercial scale

AlgaeLab1 focuses on algae based-solutions that target:

1. **Foods** — lower cost, healthier human foods, additives and nutrients
2. **Biofuels** — jet fuel, JP-8, green diesel, hydrogen, methane and ethanol
3. **Water testing and treatment** — gray water and wastewater treatment as well as remediation of industrial, animal and human wastes, including mercury, nitrogen and pharmaceuticals in drinking water
4. **Medicines** — low cost nanotechnology production methods for medicines, pharmaceuticals, vaccines and high-value nutrients
5. **Value added co-products** — emulsifiers, softeners, colorings and other food additives
6. **Feeds** — feeds, medicines and additives for animals, birds and fish
7. **Fertilizers** — solutions with low energy inputs and low cost
8. **End smoke death** — the second leading cause of death in developing countries occurs from wood smoke used for cooking fires (firewood needs also lead to deforestation)
9. **Marketing new foods** — new techniques and conveyance to overcome consumer aversion to what many see as “yucky, slicky green slime”