Sustainability and Urban Nature
An Introduction to Roosevelt University
and Exploration of the Chicago River

Mike Bryson
Sustainability Studies Program at RU
CIMBY Student Visit / Campus Tour
12 July 2013
• Campuses: downtown Chicago, suburban Schaumburg, Online
• 6 colleges
  o Professional Studies
  o Arts & Sciences
  o Performing Arts (Music / Theater)
  o Business
  o Education
  o Pharmacy
• Established 1945 in an act of radical protest
• 7,300 students (4,200 undergrad)
• Racial and geographic diversity
• Social justice-centered educational / research mission

RU's Wabash Building, which is Chicago’s first LEED-certified skyscraper (opened Fall 2012)
• **Fosters environmental literacy** through interdisciplinary work in the natural sciences, social sciences, and humanities;
• **Engages public policy** concerns surrounding consumption, energy usage, and viable economic growth;
• **Explores social justice** issues on a range of fronts, including environmental justice, resource allocation, urban development, and social equity;
• **Educates students to be leaders** on issues of sustainability, one of the critical issues of the 21st century.
Core Courses
SUST 210  Sustainable Future
SUST 220  Water
SUST 230  Food
SUST 240  Waste

Advanced Courses
SUST 310  Energy & Climate Change
SUST 320  Sprawl, Transportation, & Planning
SUST 330  Biodiversity
SUST 340  Policy, Law, & Ethics

Special Options
SUST 350  Service & Sustainability
SUST 390  Special Topics
SUST Program Features

Crosscutting Themes

Science and Environmental Literacy
Environmental and Social Justice
Urban and Suburban Systems

Pedagogical Highlights

Interdisciplinary Learning
Field Trip Experiences
Service Learning Opportunities
F2F, Online, and Hybrid Classes
Sustainability
The 21st Century's Greatest Imperative

Mr. Will Allen -- Urban Farmer,
Founder of Growing Power, &
Sustainability Entrepreneur
What Would a Sustainable Future Look Like?

Environmental resources are conserved for both future human generations as well as non-human biota.

Economic development occurs not at the expense of the natural environment, but in a way to mitigate ecological costs and impacts.

Equity – social, economic, and environmental justice – governs the process of sustainable development.
Sustainability at Roosevelt
Off to a Running Start Since 2010

Sustainable Buildings & Operations

Wabash Building
Goodman Center
Schaumburg Campus Redevelopment

Academic Innovation

Sustainability Studies (BA, BPS) program launched Fall 2010
Environmental Science Minor retooled in Fall 2012

Student Organizations & Activism

RU Green (campus events)
Net Impact (business and sustainability)
RU Reforesting (conservation)
RUrbanPioneers (Schaumburg garden)
Sustainability at Roosevelt
Awards & Recognition in 2012-13

Campus Operations / Facilities

LEED Gold: Wabash Building
LEED Silver: Goodman Athletic Center
Tree Campus USA for RU Schaumburg
Green Innovation / Green School award from USGBC
Green College selection by Princeton Review

Academics

Real Estate grad students win 2013 Eisenberg competition
RU Reforesting travels to Tanzania to do environmental conservation
SUST students win prestigious NSF research fellowship, garner local internships, write for SUST blog
Exploring the Chicago River
Connecting Nature, Science, Art, Ethics, and Sustainability

**Context**
Urban Nature in Chicago

**Science**
Exploring the Chicago River (and beyond)

**Art**
Representing the river

**Sustainability and Ethics**
Thinking like a watershed
Chicago's Urban Nature

Chicago in 1857
Any clue what this is?
North Branch of the Chicago River (Spring 2010)
Chicago's Urban Nature

WMRD's Racine Avenue Pumping Station, Bubbly Creek, Chicago (May 2009)
The Stickney Wastewater Treatment Plant, SW of Chicago (courtesy MWRD)
The Abuse of Nature

Combined Sewage Outlet, Bubbly Creek, Chicago
The Abuse of Nature

Chicken on Bubbly Creek, Chicago, 1911
Chicago Area Waterway System*: rivers, canals, locks, and controlling structures

Note the relation of the CAWS to the Des Plaines River and Salt Creek

* By the way . . . what's in a name?
Cultivating a Sense of Place

Context
Urban Nature in Chicago

Science
Exploring the Chicago River

Art
Representations of the river

Sustainability and Ethics
Thinking like a watershed
Canoeing the North Branch

Heading south into the Loop where the branches meet; Wolf Point in the background (October 2011)
Paddling the West Fork of the Upper North Branch: here we portage around a fallen tree, within the greenway of the Cook County Forest Preserve (October 2012)
Canoe trip down Bubbly Creek, an industrialized tributary of the South Branch of the Chicago River (May 2009)
Water Quality: Physical & Chemical Indicators

Temperature

pH

Turbidity

Dissolved oxygen (DO)

Nutrients (nitrogen and phosphorus)

Bacterial indicators (coliform)

Metals and organic contaminants (lead, copper, benzene, PCBs, hexavalent chromium)

Emerging contaminants (pharmaceuticals, synthetic hormones, flame retardants)
Water Quality: Biological Indicators

Phytoplankton

Zooplankton

Benthic, Emergent, & Floating Vegetation

Microbes

Macroinvertebrates

Fish

Birds

Mammals
**Water Quality: Biological Indicators**

**Group 1** – These organisms are generally considered to be intolerant to pollution

- Alderfly Larva
- Dobsonfly Larva
- Snipe Fly Larva
- Stonefly Larva

**Group 2** – These organisms are generally considered to be moderately intolerant to pollution

- Caddisfly Larvae
- Clams
- Mussels
- Water Penny
- Damselfly Larvae
- Broadwinged
- Narrowwinged
- Dragonfly Larvae
- Skimmers
- Damer
- Riffle Beetle
- Adult
- Larva
- Cranefly Larva
- Crayfish
- Mayfly Larvae
Identifying macro-invertebrates from the Chicago River's North Branch (May 2010)
Cultivating a Sense of Place

Context
Urban Nature in Chicago

Science
Exploring the Chicago River

Art
Representations of the river

Sustainability and Ethics
Thinking like a watershed

Photo by Ryan Hodgson-Rigsbee
Context
Urban Nature in Chicago

Science
Exploring the Chicago River

Art
Representations of the river

Sustainability and Ethics
Thinking like a watershed
Salt Creek Watershed

Covering roughly 150 square miles, the Salt Creek watershed incorporates more than 30 municipalities that are home to nearly 500,000 people.
Green Infrastructure
MWRDGC's John Egan Wastewater Treatment Plant, Schaumburg IL / Busse Woods
Growing Power's Iron Street Farm, on the west bank of Bubbly Creek (2012)
I Get Credit for Doing This? Cool!

Sustainability Studies Blog and Website (and, oh yes, Facebook page) Schaumburg's Sustainable Future (student research project) Prof. Mike Bryson's website/blog