

# Etown Sustainability Subcommittee Report on Existing Academic Sustainability Efforts

Spring 2015 - version 1.5

*(Updates to 2014 Committee Report are highlighted)*

Sustainability Faculty Sub-committee:

**David Bowne PhD**, Ecology, Conservation Biology, Sustainable Development  
**E. Fletcher McClellan PhD**, Political Science, US Government, Dean of Faculty  
**Sanjay Paul PhD**, Economics  
**Brenda Read-Daily PhD**, Environmental and Civil Engineering  
**Joseph Wunderlich PhD**, [Architecture](#) & [Computer Engineering](#)

## A. SUSTAINABILITY RELATED COURSES

- A.1 **Art**
  - ART 280 - World Architectures
  - ART 471 - Internship in Architecture
  - ART 499A&B - [Architectural Design Studios I & II](#)
- A.2 **Biology/Environmental Science** (*All environmental science courses are within the BIO prefix*)
  - BIO 103 - Living with the Environment
  - BIO/EN 170 - Ecology in Short Fiction
  - BIO 112 - Principles of Evolution, Ecology and Diversity of Life
  - BIO 225 - **Geographic Information Systems**
  - BIO 235 - General Microbiology
  - BIO 313 - General Ecology
  - BIO 317 - Aquatic Ecology
  - BIO 318 - Marine Biology
  - BIO 320 - Conservation Biology
  - BIO 335 - Microbial Ecology
  - BIO 362 - Ecotoxicology
- A.3 **Business**
  - BA 265 - Principles of Management (*required for all business majors*)
  - BA 372 - Sustainable Marketing (*elective*)
- A.4 **Communications**
  - COM 485 - Senior Seminar (*two Etown Sustainability videos produced to-date*)
- A.5 **Economics**
  - EC 102 - Principles of Microeconomics (*required for all business majors*)
  - EC 370 - Environmental Economics (*elective*)
- A.6 **Education**
  - ED 325 - Methods for teaching Science and Health in Early Childhood
  - ED 326 - Methods for teaching Science and Health in Elementary/Middle Level
- A.7 **Engineering**
  - EGR 275 - Environmental Site Engineering & Design
  - EGR 276 - Sustainable Resource Engineering & Design
  - EGR 280 - [Engineering Research in Sustainable Design](#)
  - EGR 280 - [Engineering Research in Architecture](#)
  - EGR 321 - Thermodynamics
  - EGR 365 - Fluid Mechanics and Hydrology
  - EGR 370 - Introduction to Environmental Engineering
  - EGR 353 - [Green Architectural Engineering](#)
  - EGR 434 - [Green Robotics, Automation, and Machine Intelligence](#)
  - EGR 471 - Internship in Architecture
  - EGR 491/492 - [Senior Design Project](#)
  - EGR 499A&B - [Architectural Design Studios I & II](#)
- A.8 **Earth Science**
  - ES 113 - NPS Earth in Space: Evolution of a Planet
  - ES 114 - NPS Geosystems: Landscapes, Oceans and Atmosphere
  - ES 117 - NPS Climate Change and the Fate of Civilization
  - ES 216 - Physical Geography
  - ES 175 - *New Course*
- A..8 **History** (*Brian Newsome could add Urban Planning content*)
  - HI 208 - Technology and Values in American Experience
- A.9 **Philosophy**
  - PH 255D - Advanced Ethics: Environmental
- A.10 **Peace and Conflict Studies**
- A.11 **Political Science**
  - PS 361 – Public Administration
- A.12 **Religion**
  - REL 151 - Life Meaning and Purposeful Work
  - REL 291 - Indic Religions: Hinduism, Jainism, and Sikhism
  - REL 292 - Buddhism
  - REL/SOC 364 - Amish Society
- A.13 **Sociology and Anthropology**
  - SSC 204 - Population and Global Issues

## B. SUSTAINABILITY RELATED PROGRAMS

- B.1 [Architectural Studies Minor](#)
- B.2 Biology BS (*environmentally-oriented students often choose Biology BS over Environmental Science BS*)
- B.2 [Engineering BS- Sustainable Design Concentration](#) (*restructured as "Environmental Engineering"*)
- B.3 Environmental Science BS - *we need a multi-disciplinary environmental studies minor or major*
- B.4 Environmental Management Masters (with Duke) *No student has yet participated*
- B.5 Forestry Management Masters (with Duke) *No student has yet participated*
- B.7 General Science BS
- B.8 Public Policy 5<sup>th</sup> year program (get BS or BA in any Major, then add a year of Policy Making – *where is this in catalog?*)
- B.9 Religious Studies BA

## C. FACULTY EXPERTISE (Atwood, Blouch, Bowne, Ciocirlan, Degoede, Estrada, Kozimor-King, Kraybill, Long, McClellan, Murray, Newsome, Paul, Read, Ricci, Scanlin, Wheelersburg, Winnipenny, Wohl, Wunderlich, and others)

## D. SUSTAINABILITY RELATED TEACHING & RESEARCH SPACES

- D.1 Art Studios - P. Ricci, M. Friedly
  - D.2 Architectural Computer Servers (virtual green architectures and towns) - J. Wunderlich
  - D.3 Biology Environmental Science Labs - D. Bowne, T. Murray, D. Wohl - *replace demolished greenhouse*
  - D.4 Campus (Lake, wetlands, much farmland across from quads, organic garden – 300 pounds per year harvested, etc)
  - D.5 Education Department classrooms and labs
  - D.6 Engineering Environmental Engineering Research Lab - B. Read-Daily
  - D.7 Engineering Geosciences Lab/Studio - M. Scanlin
  - D.8 Engineering [Design & Technology-Transfer](#) Studio - J. Wunderlich
  - D.9 Engineering Solar Cabin and Sustainability-electronics Lab - T. Estrada
  - D.9. Math Computer lab (E368). *Has ArcGis geographic information system (GIS) software. Popular in sustainability work.*
  - D.10 Political Science spaces
  - D.11 Religious Studies – Young Center
  - D.12 Sociology and Anthropology spaces
- OFF-CAMPUS: *We have use of Lancaster County Conservancy preserves for research & student projects. Closest one 3 miles away*

## E. SUSTAINABILITY RELATED SCHOLARSHIP

- E.1 Faculty research and publications (List to be compiled)
- E.2 Grants (Rick Basom has given us this list) "Sustainability-Related Grant Applications and Awards" *List removed for confidentiality*
- E.3 Scholarship & Creative Arts Day [Sustainability Symposiums](#) *(4<sup>th</sup> annual event March 21, 2015)*
- E.4 "GreenCon" Regional conferences e.g., at Dickinson 2013 a LEED charette conducted on promoting regional sustainability (Etown, Dickinson, Penn State, Drexel, Temple, and Philadelphia U.)
- E.5 *Perhaps committee goes to Greencon2015 at Franklin & Marshal College on March 19, 2015 3:00pm for this talk: "Elizabethtown College Architecture of Wellness and Sustainability"*

## F. SUSTAINABILITY RELATED CLUBS

- F.1 "Biking Club"
- F.2 "Environmental Group" – M. Kozimor-King, Sociology -- Susan Webster, English
- F.3 "FEAST" (Future energies and sustainable technologies) – T. Estrada, Engineering
- F.4 "Habitat for Humanity"
- F.5 "National Science Teachers Association" – K. Blouch, Education
- F.6 "Outing Club"
- F.7 *Engineers Without Borders (EWB) student chapter being formed in Spring 2015*

## G. ACADEMIC COMPETITIONS and OPPORTUNITIES FOR STUDENTS TO PUBLISH (Peer-reviewed Conferences, Journals, etc.)

- G.1 Engineering Solar Decathlon (partially planned for in Spring 2013 Charette)
- G.2 Engineering Solar Boats (*it's been several years since competing*)
- G.3 Engineering Intelligent Ground Vehicle Competition (includes environmental mapping) - several years since competing
- G.4 [Mobile Wellness Center Design Competition](#) (Spring 2014)
- G.5 [Campus Wellness Center Design Competition](#) (Fall 2015) – 22 judges
- G.6 [Health-Clinic Design Competition for Sierra Leone, Africa](#) (Fall 2015) – 8 judges

## H. ACADEMIC OUTREACH

- H.1 Professional affiliations (Sierra Club, USGBC, EPA, NSPE, AIA, ASCE, ASEE, IEEE, ASME, etc)
- H.2 Farms (e.g., Methane Digester – saves \$15,000/yr, Mennonites families) - B.Read, D.Kraybill, J.Wunderlich
- H.3 Masonic Homes (Largest Masonic retirement facility in the Nation? – next door to us) – D. Bowne
- H.4 Collaborations with other U.S. Schools (Universities, Colleges, High-schools, Grade-schools) *See E.4 and E.5 above*
- H.5 Collaborations with Schools Abroad (University of Trento in Italy, Pantheon Institute in Rome, U. Gambia in Africa)
- H.6 Corporate affiliations (Phoenix Contact USA and Germany, IBM, SustainX, Bechtel, etc) – J. Wunderlich, M.Scanlin, etc
- H.7 Government (DEP, Planning commissions, Building inspectors, Mayors, State Legislature, U.S. Congress) - F. Mclellan
  - *2014, 2015 outreach to Governor Tom Wolf and Senator Bob Casey*
- H.8 Foreign governments (Italy, Gambia, Japan, Costa Rico, Middle East) - Wunderlich, Estrada, Degoede, John Craig
- H.9 Venture Capitol start-ups (e.g. via Ambassador Craig's International venture capital company, etc)
- H.10 NGO's (Peace Core, Habitats for Humanity, World Vision, Lancaster County Conservancy, etc)
- H.11 Young Center and churches; Don Kraybill for Amish and Mennonites, Jeff Long for Hinduism, Jainism, and Buddhism.
- H.12 Native Americans – Bob Wheelersburg (Anthropology) has organized several activities in the past

## I. GREEN INTERNSHIPS (*we need to make a list somehow – from career services? – from departmental Administrative Assistants?*)

## J. PRESS

- I.1 Winter 2012 Elizabethtown College Magazine *"Blue and gray turns green"*
- I.2 [SLE-Capstone Architecture Poster to Trustees](#) (and again to "Trustees in Training" on March 20, 2015)
- I.3 Talk at Franklin & Marshal for Greencon15, March 19, 2015 3:00pm: *"Elizabethtown College Architecture of Wellness and Sustainability"*
- I.4 [Compare our Green web-presence to other schools](#) (2014), Hopefully action taken in 2015

## K. FACULTY/STAFF COLLABORATIONS

- K.1 Successful 2013 Hydroponic Gardens (in [Design & Technology-transfer Studio](#)), now being built in food services
- K.2 New large Elizabethtown College Photovoltaic Array to be built (M.Scanlin, Plant-ops, et al)