Message from the Director

Greetings!

Should Environmental Studies be a stand-alone major? This is a question I often get from students, staff and faculty. I have considered this issue carefully in the context of what works at Tufts and of national trends. Making a stand-alone major is not the best pathway for Tufts or its students for several reasons.

First, to make positive change in the environment, students must weave together science (what do the data say?), social science (how do different cultures view and value the environment? what are the costs and benefits of an action? what factors trigger political, social and behavioral change?), and humanities (what art forms alter human emotions/senses/behaviors?). Clearly students need to be trained in many disciplines, learn to integrate them and be effective communicators. A typical major at Tufts requires only 10 courses - this would mean that students are likely to only scratch the surface of each discipline. Yet the deepest learning often takes place in interdisciplinary and advanced courses, so this would require more than 10 courses. In fact the best stand-alone Environmental Studies majors nationwide require 17-20 courses, which is similar to completing a double major at Tufts. In sum, our current program with Environmental Studies as a co-major makes disciplinary and interdisciplinary learning complimentary.

Second, because it is a co-major, students have more flexibility to choose environmental courses and an internship that are closely aligned with their interests, such as pollution remediation, deforestation, water rights, climate change, alternative energy, sustainability policies, and film production, to name a few. (Completing two majors is a common occurrence at Tufts and those co-majoring with Environmental Studies find it easy with a little planning.) Tufts has made a commitment to hiring more faculty whose research and teaching is in environmental studies, and this is creating even more academic and research opportunities for students in the arts, humanities, social sciences and natural sciences. We are excited that our program offers rich educational opportunities and encourages student creativity.

Finally, co-majoring gives graduates added flexibility. We have found that upon graduation our students can choose to enter the work force in an environmental field, they can position themselves for graduate or professional school in a specific discipline, or they
can pursue an environmental graduate degree. To illustrate, recent grads have landed jobs at non-profits, in environmental consulting or in business, others have pursued degrees in discipline-specific programs or in medical or veterinary programs, and many have matriculated in one of the ever-increasing number of graduate degree programs in environmental studies (such as the Nicholas School of the Environment at Duke). It is important for our majors to have a well-rounded environmental studies background but they must also have an expertise (depth) to be competitive in today's job market.

To sum it up, most of our majors start off as Environmental Studies majors and then find a second major that fits their interests and creates wonderful synergies and opportunities that would not have been there otherwise. Having Environmental Studies as a co-major adds depth and breadth to a student's undergraduate program, and positions students well for whatever they elect to pursue beyond Tufts.

Sincerely,
Colin M. Orians, Director

Faculty Profile: Stephen H. Levine
by Nathalie Schiels

Industrial Ecology - A Growing Field with Numerous Applications

This coming Fall 2011, the Department of Civil and Environmental Engineering's Stephen Levine will be offering a new class, Industrial Ecology. This class will introduce students to a newer field in engineering that falls outside of a traditional engineering education.

Professor Levine describes the field as a metaphor, in which the industrial system is viewed as an ecosystem. By comparing and contrasting ecological and industrial systems, industrial ecology engineers and economics hope to determine best practices for the production of goods and services. Examples of the application of industrial ecology abound but one mentioned by Professor Levine is a project that uses input/output models on a global scale to compare rain-fed agriculture to irrigation-fed agriculture. With increasing awareness given to issues of food security, the goal of sustainable food production for the world has become a major project. Industrial ecology seeks to minimize the need for rare resources such as water while meeting global demands of goods and services.

Liberal Arts students are encouraged to take the class as long as they have a solid background in mathematics, as they will be expected to use and create models studying the flow of materials within industrial systems of production and consumption.
Professor Levine first became interested in the field of industrial ecology while working with a PhD student interested in Life Cycle Analysis (LCA). Working with Rensselaer Polytechnic Institute Professor Faye Duchin furthered Levine's exposure as he discovered connections between his engineering background and her use of input/output economics to study the flow of goods and services. Industrial Ecology is an exciting and vital field for Tufts students who are interested in ecology, engineering and economics.

For more information on Industrial Ecology as a field of study, visit The International Society for Industrial Ecology and for additional information on Steven H. Levine.

CEE 0194 Special Topics: Industrial Ecology - The Science of Sustainability satisfies a Track III ENVS Program requirement.

ENVS Announcements

New GIS Courses
On June 17th, Dean McClellan announced the addition of new undergraduate GIS courses to the Tufts curriculum. The initiative will begin in the Spring of 2012, when he hopes to introduce a "steady state" of introductory GIS classes in the fall/spring of each year and an advanced GIS class each spring. These will be offered primarily to undergraduate students in addition to the courses currently taught by Barbara Parmenter through the UEP and Patrick Florance at Fletcher.

Arts and Sciences will be giving these courses non-departmental registration tags (GIS + course number) and they will be administered through Tufts Academic Technology Services. While the courses still have to be approved by the faculty, we hope this will happen in the early fall semester. Colin and the other ENVS Executive Committee strongly support these additions.

While the teaching faculty have not been hired yet, Dean McClellan is enthusiastic about making it happen. We'll keep the students informed as more concrete information arrives.

ENVS Courses at the Ex-College!
Lunch & Learn Series lecturers, Michael Davis, Jeff Hake and Marisol Pierce-Quinonez will be offering courses this coming fall at the Experimental College. Both of these courses count toward the Science and Society Track of the Environmental Studies major.

- EXP-0020-F: Architecture and Climate Change: Policy, Power, and Principles with Michael Davis
  (NEW!)
  How are buildings related to climate change? How has "sustainability" influenced how architects design buildings? And how has greenhouse gas reduction policy in Massachusetts changed the regulatory climate for architects and real estate developers? The course begins with an overview of current thinking about sustainable design, explores the design process and how scientific and technological challenges are being addressed by the practice, and elaborates on the complex and changing relationship between policy, energy, regulation and construction.

  Progressive topics like the LEED Rating System, the "2030 Challenge", the "Living Building Challenge", "Net Zero Energy Buildings", distributed generation, and building-integrated renewable energy will be covered. The course will also feature a field trip to a high-performance "green building" and guest presentations from a building science engineer, a clean energy policy advocate, a regulator or government official, and a design educator.
  1.0 credit, Letter-graded
Michael R. Davis, FAIA, LEED®, is a Principal and Vice President at Bergmeyer Associates, Inc. Mr. Davis specializes in sustainably designing new and adaptively-reused high-performance multi-family mixed-income housing, commercial buildings, and university residence halls. He advises the Boston Redevelopment Authority as acting Chair of the Boston Civic Design Commission, Co-Chairs the AIA Massachusetts Government Affairs Committee, and is Public Policy Commissioner on the Board of the Boston Society of Architects. Mr. Davis has served on Mayor Thomas Menino’s Green Building Task Force for the City of Boston and Governor Deval Patrick’s Net Zero Energy Building Task Force for the Commonwealth of Massachusetts. Mike is also an Overseer and a member of the Faculty at the Boston Architectural College and currently teaches Graduate Research and Writing. In 2002, Mike was given the second annual Award for Excellence in Teaching from the BSA Members of the AIA College of Fellows. Mr. Davis holds a Bachelor Degree in Architecture from the Pennsylvania State University and a Master of Architecture from Yale University.

- **EXP-0026-F: Introduction to Sustainable Food Systems with Jeff Hake and Marisol Pierce-Quinonez**

  Modern agriculture is the source of a great majority of our food. In recent years industrial agriculture has been indicted as a root cause of many of modern society's woes: hunger, obesity, disease, environmental degradation, climate change, economic injustice, and physical and mental estrangement from the land. With these problems as a backdrop, alternative food systems have emerged. Some are the simple revival of "antiquated" practices while others apply agricultural principle to technological innovation. Cities and communities are becoming active players in these new systems, and food is being "slowed down". This course attempts to outline some of these emerging food systems, providing theoretical background and discussion as well as practical, hands-on tools for becoming a part of these new systems.

  **Jeff Hake is in the final semester of his Masters program, receiving a degree in Agriculture, Food and the Environment at Tufts University. Jeff likes growing marigolds in pots, tomatoes on strings, and corn in rows, and he thinks that the bicycle tractor he's working on could be helpful for each of those. Visit Jeff's blog.**

  **Mari Pierce-Quinonez is currently working towards a dual Masters in Urban Planning and Agriculture, Food & Environment at Tufts University. Mari has found that she is best at dreaming up great ideas that rarely get turned in to real projects, which is probably a big part of the reason why she is pursuing a career in Urban Planning. Visit Mari's blog.**

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**Internships**

**Earthwatch Institute: Research Associate Internship**

- **Location:** Boston, MA
- **Position Type:** Internship, unpaid
- **Start date:** mid to late August
- **Days per week:** 3-5
- **Website:** [http://www.earthwatch.org/aboutus/jobs/internships/](http://www.earthwatch.org/aboutus/jobs/internships/)
- **Contact email:** research@earthwatch.org

**Description:** As the largest non-profit organization supporting "citizen science," in its nearly 40 year history, Earthwatch has sponsored over 1000 field research projects in 55 countries across the globe. Earthwatch expeditions and field research centers link volunteers with international scientists working to conserve habitats, species, and cultures. Since 1971, Earthwatch-sponsored research projects have contributed more than 10 million hours of field research time.
Research associate interns will assist the Research Department in a variety of tasks relating to the outcomes and impacts of field research projects Earthwatch supports in four Research Areas: Climate Change, Ecosystem Services, Oceans, and Cultural Heritage. Research interns will evaluate projects' achievements relating to conservation, education, publication, environmental impacts, long-term legacy, capacity building, and partnerships...for additional information.

Additional Internships

GIS Analyst: Vanasse Hangen Brustlin

Location: Framingham/Worcester, Massachusetts

Job Description: VHB is looking for a Senior GIS Analyst/Specialist to join our Worcester, Massachusetts office.
Responsibilities:

- Responsible for the application of GIS technology into environmental projects such as, Environmental Impact Statements (EIS), Environmental Assessments (EA) and energy facility siting and routing studies
- Will apply GIS technology to a broad range of projects, large and small
- Engage in business development including working with existing clients, such as energy market sector clients and the Federal Aviation Administration, to grow VHBs GIS services
- Will represent VHB at industry conferences and events
- The position also requires participation in strategic planning for the environmental and GIS service offerings
- Provide assistance to GIS users in VHBs Environmental Department as well as other VHB departments

Skills and Abilities:

- Independent, self-motivated individual
- Requires excellent cartographic, written and oral communication skills and a proven ability to work collaboratively as part of a multidisciplinary project team
- Must have strong analytical and cartographic skills
- Strong attention to detail and an eye for professional quality graphical layouts and presentations
- Comprehensive knowledge of geographic concepts, file structures, coordinate systems, metadata creation, and data development standards

Qualifications:

- Must have a degree in geography, environmental sciences or closely related field
- Minimum of 8-10 years direct experience in GIS using ESRI software
- Expertise in ESRI GIS software (ArcGIS) is required
- AutoCAD experience with regard to working with CAD data, editing, and GIS integration is highly desirable
- Field experience and/or understanding of GPS technology and field data collection practices is also valuable but not required
VHB is proud to be an Equal Opportunity/Affirmative Action Employer. VHB ensures non
discrimination in all programs and activities in accordance with Title VI and Title VII of the Civil Rights
Act of 1964. VHB Participates in the E-verify employment authorization program

**Additional Jobs**

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**Events**

**Documentary: "Queen of the Sun: What are the Bees Telling Us?"**

June 22- 26, 2011 - Times Vary
[http://www.queenofthesun.com/about/trailer/](http://www.queenofthesun.com/about/trailer/)
Contact Name: Annabelle Gardner
[annabelle@collectiveeye.org](mailto:annabelle@collectiveeye.org)

We are proud to announce the National Theatrical Release of the new award-winning, grass-roots feature documentary,
*Queen of The Sun: What are the Bees Telling Us?*
a profound, alternative look at the global bee crisis from Taggart Siegel, critically acclaimed director of the grass-roots hit
*The Real Dirt on Farmer John*
. Recognized by Box Office Magazine as "The feel-good advocacy movie of the year."
[View the trailer](http://www.queenofthesun.com/about/trailer/)

- [Read recent notable press](#)

Queen of the Sun is premiering in Boston, MA at the
[Museum of Fine Arts](http://www.mfa.org/)
playing June 22nd-26th!

**QUEEN OF THE SUN: What are the Bees Telling Us?**
is a profound, alternative look at the global bee crisis from Taggart Siegel, acclaimed director of the grass-roots hit THE REAL DIRT ON FARMER JOHN. Taking us on a journey through the catastrophic disappearance of bees and the mysterious world of the beehive, this engaging and ultimately uplifting film weaves an unusual and dramatic story of the heartfelt struggles of beekeepers, scientists and philosophers from around the world including Michael Pollan, Gunther Hauk and Vandana Shiva. Together they reveal both the problems and the solutions in renewing a culture in balance with nature.

**Additional Environmental Events**