

INDUSTRIAL ECOLOGY RETREAT

2003

The Hacienda: April 7–8, 2003

**PROFITABLE  
SUSTAINABILITY**

*Revealing the Hidden Win-Win Potential for Profitable Sustainability in Industry*

---

SPONSORED BY

**Future 500 & COLLINS FAMILY FOUNDATION**

# TABLE OF CONTENTS

Profitable Sustainability	2
Retreat Objectives	2
Agenda	3
Setting	5
The Future 500	5
The Collins Family Foundation	5
Photographs – Exchanging Ideas and Bonding as a Group	6
<b>ABSTRACTS OF TALKS</b>	
<b>Session 1: Profitable Sustainability and the Future 500</b>	<b>12</b>
1.1 Welcome and Overview of Sessions	12
1.2 The Things We Wish Were True, and the Things That Are True	13
1.3 Triple Bottom Line Accounting & Metrics	15
1.4 Sustainability - A United Nations Millennium Challenge	17
<b>Session 2: Experiences and Case Studies</b>	<b>18</b>
2.1 The Greening of a Pulp and Paper Mill	18
2.2 Sustainable Cement and the Environment – the Good, the Bad, and the Ugly	19
2.3 ConocoPhillips and Sustainable Development: Draft Sustainable Development Policy Statement	20
<b>Session 3: MBA Programs for Profit &amp; Sustainability</b>	<b>21</b>
3.1 Bainbridge Island Graduate Institute: Business Leadership for Sustainability	21
3.2 Sustainable MBA Programs	22
<b>Session 4: Profitable New Ventures for a Sustainable World</b>	<b>23</b>
4.1 Case Study: Thai Photovoltaics, Ltd.	23
4.2 Using Marketing Communications to Get the Word Out	24
4.3 The Future 500 CAP GAP Audit	26
<b>Session 5: Approaches &amp; Tools for Profitable Sustainability</b>	<b>28</b>
5.1 Advancing Applied Industrial Ecology by Improved Operational Modeling	28
5.2 Simulating the Environmental Implications of Organizational Behavior	29
5.3 Analyzing Profitable Sustainability Potential: An Experiment	30
5.4 Building Community Collaboration to Support Sustainable Prosperity	31
<b>Session 6: Stakeholders &amp; Corporate Accountability Audits</b>	<b>32</b>
6.1 Extended Producer Responsibility (EPR) Versus Shared Responsibility	32
6.2 The Role of Third Parties to Verify Sustainability	33
6.3 Social Returns Analysis in Investment Decision Making	34
<b>Session 7: Panel – Achieving Sustainability in the Long Term</b>	<b>35</b>
7.1 Introduction of Topic & Panel Members	35
7.2 The Role of Business in Sustaining Human Life on Earth	36
7.3 Using Scenario-Based Strategic Planning for the Planet Earth	37
7.4 The Biological (and Political) Basis of Sustainability: Thinking Outside the Boxes	38
7.5 The World Assembly	39
7.6 A Flourishing Earth	40

### **Profitable Sustainability**

Many opportunities exist within industry where manufacturing and distribution processes could be made more environmentally friendly while, at the same time, improving profits. Although using alternative resources or methods in a complex production process may benefit both a company's financial bottom line and the environment, such alternatives are frequently not obvious, and they may require a combination of management focus and deeper analysis to locate. Analytic methods for optimizing profitability have been used by large companies for many decades. The use of industrial ecology techniques such as life cycle analysis (LCA) to evaluate human and natural environmental impacts of new products and processes has been growing rapidly in the last few years. However, the synthesis of these two business processes to increase financial profitability while improving sustainability is recent. Taking greater advantage of the win-win situations such analysis reveals can significantly reduce the harmful impact of industry on the human and natural environment at very little or no cost, and should be strongly encouraged. The challenge posed to industry, NGOs, venture capital groups, and governments is to focus industry's attention on finding and fully exploiting these opportunities.

### **Retreat Objectives**

This retreat was organized jointly by the Future 500 and Collins Family Foundation to provide a venue for bringing profitable sustainability opportunities into better focus. For the past eight years, Future 500 has sponsored five major conferences and several retreats and summits on Industrial Ecology. The "IE" series of conferences have brought together a diverse network of hundreds of corporate executives, managers, technologists, and environmental advocates.

The objective of this retreat was to present and discuss the many facets of profitable sustainability. Retreat participants were invited from the Future 500 membership and other interested parties around the world representing industry, small business, venture capital and non-profit organizations, academia, and government. The retreat emphasized industrial manufacturing and distribution—the supply chain—and its relationship with human and environmental sustainability. Specific examples of profitable sustainability and the key ingredients of success were shared. Techniques, tools, and supporting analytic methods for locating and optimizing profitably sustainable win-win opportunities were discussed. Finally, exciting new developments in integrating the human and natural dimensions of sustainability into MBA programs were presented. The tone of the retreat was intentionally casual. Meals and break times were lengthy to promote one-on-one discussions. Both the location of the retreat, in its isolated splendor on California's central coast, and its timing at the height of the wildflower season were chosen to inspire and foster the exchange of ideas on profitable sustainability.

The Industrial Ecology Retreat 2003 also provided an important planning function. The topics raised in the relaxed and creative atmosphere of the retreat will be used in setting the agenda for the full-scale IE 2004 Conference.

## Agenda

### Sunday, April 6

---

5:00 – 7:15pm Welcoming Reception hosted by the Collins Family Foundation  
7:30 – 9:00 pm Group Dinner

### Monday, April 7

---

8:00 – 08:45 am Group Breakfast

#### **Session 1 Profitable Sustainability and the Future 500**

9:00 – 09:20 am 1.1 Welcome and Overview of Sessions.  
Dwight Collins, *President*, Collins Family Foundation

9:20 – 09:40 am 1.2 The Future 500 Strategic Plan: 2003 to 2005  
Bill Shireman, *President and CEO*, The Future 500

9:40 – 10:10 am 1.3 Trends in Profitable Sustainability Over the Next 5 Years  
Ed Quevedo, *Director*, Environmental Management & Sustainability Programs,  
WSP Environmental NA, Inc.

10:10 – 10:30 am 1.4 Industrial Ecology: Global Sustainability - United Nations Millennium Project  
Jack Gottsman, The Clarity Group

10:30 – 11:10 am Refreshment Break

#### **Session 2 Experiences and Case Studies**

11:10 – 11:30 am 2.1 The Greening of a Pulp and Paper Mill  
Marquita K. Hill, Department of Chemical Engineering, University of Maine, Orono

11:30 – 11:50 am 2.2 Sustainable Cement and the Environment - the Good, Bad & Ugly  
Hendrik G. van Oss, *Cement Commodity Specialist*, US Geological Survey

11:50 – 12:10 pm 2.3 ConocoPhillips and Sustainable Development  
Jean C. "Pogo" Davis, *Manager*, Sustainable Development, ConocoPhillips

12:10 – 2:00 pm Lunch/ Break

#### **Session 3 MBA Programs for Profit & Sustainability**

2:00 – 2:20 pm 3.1 Bainbridge Island Graduate Institute: Business Leadership for Sustainability  
Gifford Pinchot, *Chairman*, BGI

2:20 – 2:40 pm 3.2 Sustainable MBA Programs  
Rick Bunch, *Director*, Business Education, Sustainable Enterprise Program,  
World Resources Institute

#### **Session 4 Profitable New Ventures for a Sustainable World**

2:40 – 3:00 pm 4.1 Case Study: Thai Photovoltaics, Ltd.  
Walt Ratterman, *Vice President*, Thai Photovoltaics, Ltd.

3:00 – 3:20 pm 4.2 Using Marketing Communications to Get the Word Out  
Patsy Northcutt, *Producer/Director*, Northcutt Productions

3:20 – 3:40 pm 4.3 Demonstration of the CAP GAP Audit Tool  
Aileen Ichikawa, *Senior Consultant*, Global Futures Foundation & Future 500

4:30 – 5:30 pm Group Walk to the San Antonio Mission

6:00 – 7:00 pm Reception hosted by the Future 500

7:00 – 9:30 pm Group Dinner

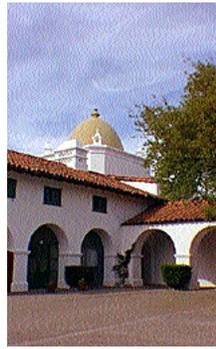
9:45 – 10:00 pm Evening Talk Under the Stars  
Russ Genet, *Astronomer and Director*, Orion Institute

## Agenda

### Tuesday, April 8

---

8:00 – 8:45 am	Group Breakfast
<b>Session 5</b>	<b>Approaches &amp; Tools for Profitable Sustainability</b>
9:00 – 9:20 am	5.1 Advancing Applied Industrial Ecology by Improved Operational Modeling Gjalt Huppés, Center of Environmental Science, Leiden University
9:20 – 9:40 am	5.2 Simulating the Environmental Implications of Organizational Behavior Clinton Andrews, E.J. Bloustein School of Planning & Policy Development, Rutgers University
9:40 – 10:00 am	5.3 Analyzing Profitable Sustainability Potential: An Experiment Paul Raynault, <i>President</i> , The Raynault Foundation
10:00 – 10:20 am	5.4 Building Community Collaboration to Support Sustainable Prosperity Karl Ostrom, <i>Executive Director</i> ; Mary Rose, <i>Organization and Resource Development Coordinator</i> , Network for Business Innovation and Sustainability/NW, Albers School of Business & Economics, Seattle University
10:20 – 11:00 am	Refreshment Break
<b>Session 6</b>	<b>Stakeholders &amp; Corporate Accountability Audits</b>
11:00 – 11:20 am	6.1 Product Stewardship—Extended Producer Responsibility Versus the Shared Responsibility Model: A Systems Approach Cate Gable, <i>Senior Consultant</i> , Global Futures Foundation & Future 500 and <i>President</i> , Axioun Communications, Intl.
11:20 – 11:40 am	6.2 Certifying and Verifying Triple Bottom Line Performance Bill Sullivan, <i>Director of Marketing</i> , DNV Certification
11:40 – 12:00 pm	6.3 Socially Responsible Technology Investments Sara Olsen, <i>Founding Partner</i> , SVT Consulting
12:00 – 12:20 pm	6.4 Informal Group Planning Session for IE 2004 Conference Bill Shireman, CEO, Future 500 & Global Futures Foundation
12:20 – 2:00 pm	Lunch/Break
<b>Session 7</b>	<b>Panel: Achieving Sustainability in the Long Term</b>
2:00 – 2:15 pm	7.1 Introduction of Topic and Panel Members Russell Genet, <i>Director</i> , Orion Institute
2:15 – 2:30 pm	7.2 The Role of Business in Sustaining Human Life on Earth Dwight Collins, <i>President</i> , Collins Family Foundation
2:30 – 2:45 pm	7.3 Using Scenario-Based Strategic Planning for the Planet Earth Peter A. Corning, Ph.D., <i>Director</i> , Institute for Study of Complex Systems, Palo Alto, CA, USA
2:45 – 3:00 pm	7.4 The Biological (and Political) Basis of Sustainability: Thinking Outside the Boxes Peter A. Corning, Ph.D.
3:00 – 3:15 pm	7.5 The World Assembly Paul Raynault, <i>President</i> , The Raynault Foundation
3:15 – 3:30 pm	7.6 A Flourishing Earth Richard Trowbridge, <i>Director</i> , Center for a Flourishing Earth
3:30 – 4:00 pm	7.7 Panel Discussion Moderated by Russell Genet, <i>Director</i> , Orion Institute
4:30 – 6:00 pm	Informal Reception
6:30 – 8:00 pm	Group Dinner



### Setting

The Hacienda, located on the former William Randolph Hearst Ranch (now the Hunter Liggett reservation), was designed by architect Julia Morgan, and completed in 1930. A meandering mission style estate offering proud towers, shady cool loggias, a regal gold-leafed dome and grand generous hearths, the Hacienda is set among beautiful rolling hills, oak trees, and expansive fields blanketed with wildflowers, five miles west of the tiny hamlet of Jolon. The Hacienda is run as a concession on the Hunter Liggett Reservation. Rooms are charming, historic, and reasonably priced. Overnight accommoda-

tions are limited to 25 people. For more information, visit <http://www.usawines.com/hacienda/>.

Just a short walk from the Hacienda through the fragrant fields, one can visit the San Antonio Mission. Founded by Franciscan Padre Junipero Serra in 1771, it was the third mission to be established in California, though it is not well known due to its isolation. Construction on the Great Church was initiated in 1810. The adobe walls are six feet thick, to insure against earthquakes and maintain cool temperatures in the traditional way. The ceiling timbers were floated down the San Antonio River from the nearby costal mountains, a good example of sustainable local material usage and delivery methods of this era. Although abandoned in 1882, the mission was lovingly and faithfully restored in 1948, with direction from the Franciscans and financial assistance from The William Randolph Hearst Foundation.

### The Future 500

Future 500 ([http://www.future500.org/Future\\_500/frm-500.htm](http://www.future500.org/Future_500/frm-500.htm)) is a global network of leadership companies seeking to learn how to maximize their triple bottom lines, i.e., their economic, social, and environmental performance, simultaneously. Members of the Future 500 include Coca-Cola, General Motors, Hewlett-Packard, Mitsubishi Electric, and Nike. Future 500 provides them with tools, training and consultation to maximize corporate returns not just to shareholders, but to all their stakeholders, in the workplace, community, marketplace, and environment. When these objectives are fulfilled, an increase in profit boosts a company's social and environmental performance as well. Every time a company improves its environmental and social footprint, its profits also rise.

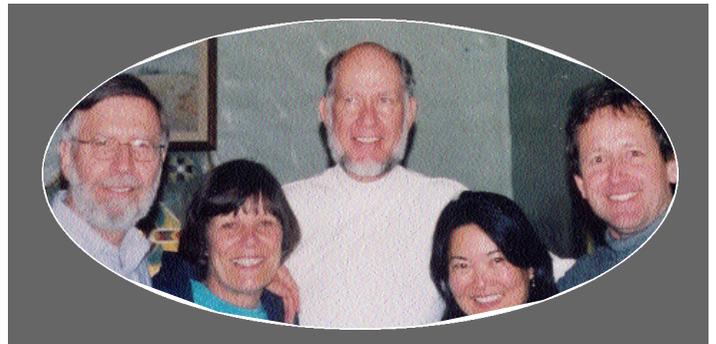
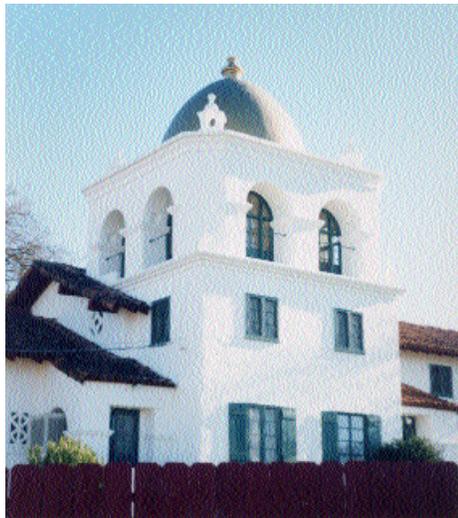
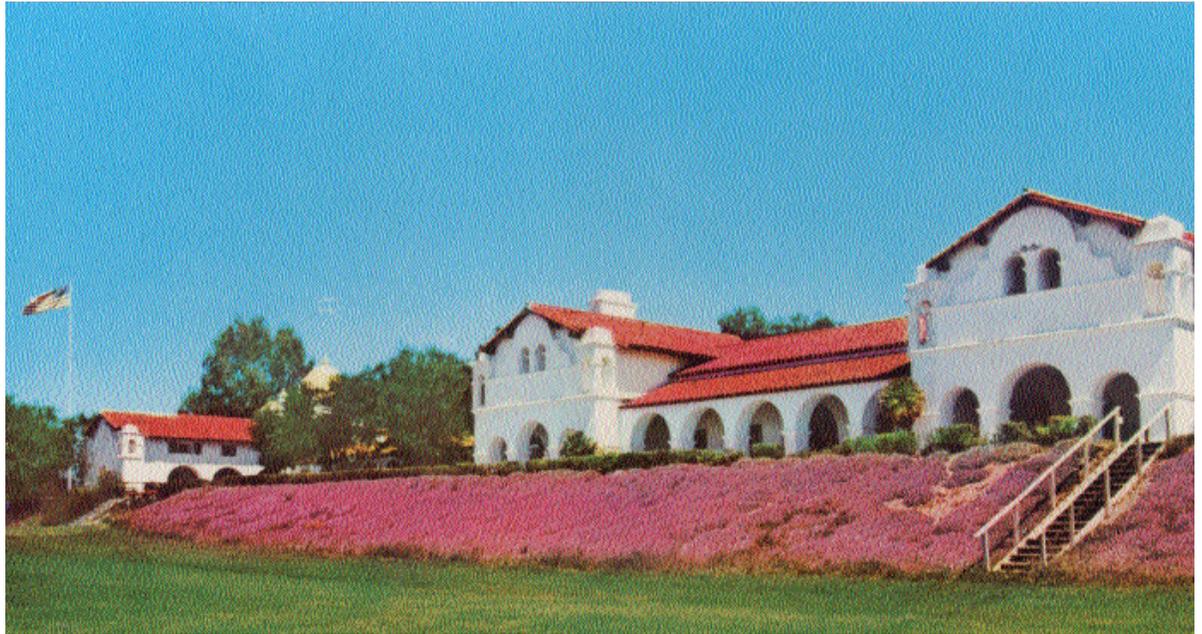
The solution-providing partners of the Future 500 include Deloitte & Touche, Det Norski Veritas, Ecostream, ERM, Global Futures, Hewlett-Packard, Manning Selvage & Lee, Pitney Bowes, and WSP. These organizations implement systems tools developed by world leaders in accounting, communications, innovation, technology, and the environment.

The mission of the Future 500 is to grow businesses that maximize total gain: economic, social, and environmental. One of its most effective tools is Industrial Ecology. Already the methods of Industrial Ecology have shattered barriers to innovation, protected the environment, and generated more than \$2.5 billion in new savings and profits for our members and the public.

### The Collins Family Foundation

The goal of the Collins Family Foundation is to contribute to and provide leadership in making our human presence on Earth sustainable. For a number of years the Collins Family Foundation has donated funds to such institutions as the Worldwatch Institute, ZERI Foundation, Land Institute, and the Positive Futures Network. It has also given to an innovative masters program at Northern Arizona University which features "Visions of Good and Sustainable Societies." The Foundation's President, Dr. Dwight Collins, has had a successful career in industry implementing supply chain optimization software. Currently, he is a consultant to industry in the areas of strategic planning, supply chain optimization, and sustainable business. Having broadened the scope of his work to include social and environmental performance, he gave his time and resources with the Foundation's co-sponsorship, and organized this retreat with the help of Cheryl L. and Dr. Russell M. Genet.

Questions about details of this retreat or the **Collins Family Foundation** should be emailed to Dwight Collins at [Dwight.Collins@verizon.net](mailto:Dwight.Collins@verizon.net)



**IE2003 Profitable  
Sustainability Retreat  
April 7-8, 2003**

The Hacienda Hotel and  
Restaurant

Completed in 1930  
located on Fort Hunter  
Liggett in Central California  
Originally part of the  
W.R. Hearst Ranch

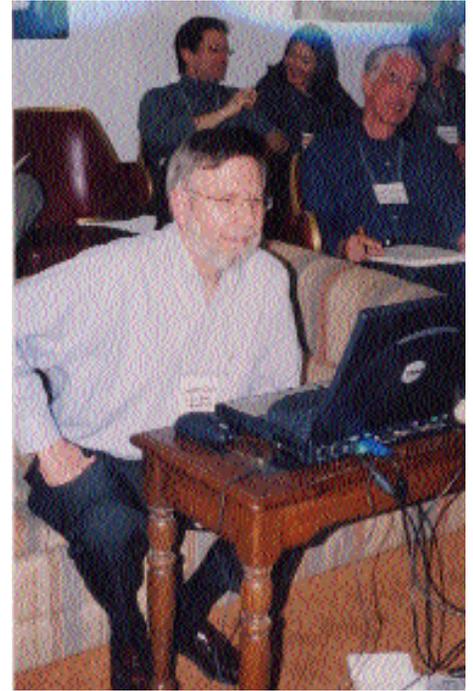
The Golden Domed Tower  
of the Meeting  
and Reception Suites

Retreat Hosts:

Left to Right  
Dr. Dwight Collins;  
Collins Family Foundation

Cheryl Genet  
and  
Dr. Russel Genet;  
Orion Institute

Aileen Ichikawa and  
Bill Shireman;  
Global Futures



**The Meeting Room Suite provided a pleasant and Intimate Atmosphere:**

Dwight Collins keeps the Power Point flowing and the meeting rolling

Left to Right  
Pogo Davis, Paul Raynault,  
Hendrick van Oss,  
RickTrowbridge, Cate Gable,  
and Libba Pinchot

Rich Bunch, Clint Andrews,  
Russell Genet, Hendrik G.  
van Oss, Walt Ratterman,  
Jack Gottsman, Mary Rose,  
Aileen Ichikawa, Bill  
Shireman, Karl Ostrom,  
Gifford Pinchot, Pogo Davis

Left to Right  
Bill Sullivan, Rick Bunch,  
and Clint Andrews share a  
spot by the window

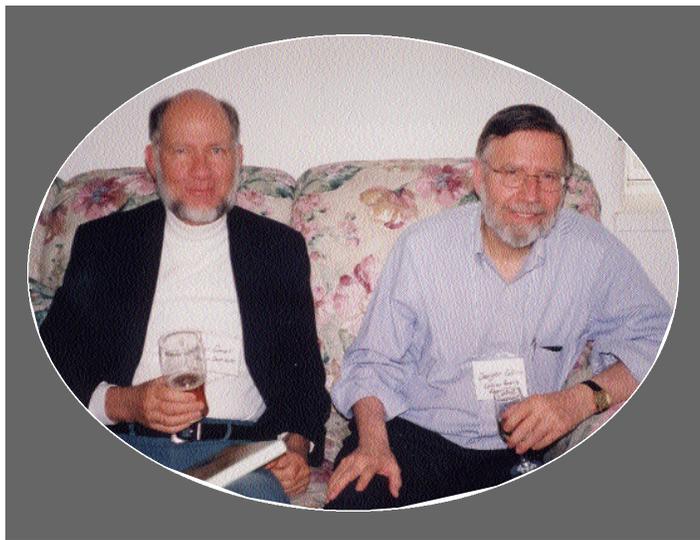


**The Reception Room's homey atmosphere encouraged sharing and building friendships:**

Left to Right  
Marquita Hill, Sara Olsen,  
Peter Corning, Greg Voelm

Left to Right  
Pogo Davis, Gifford Pinchot,  
Karl Pstrom, Cate Gable,  
and Libba Pinchot

Enjoying an old friendship  
and a short break:  
Russell Genet and  
Dwight Collins





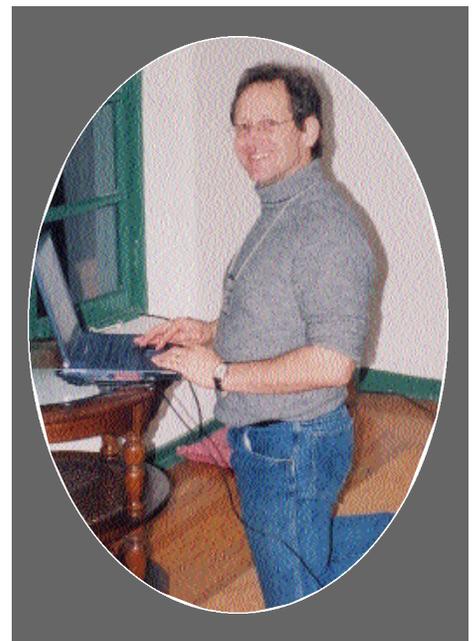
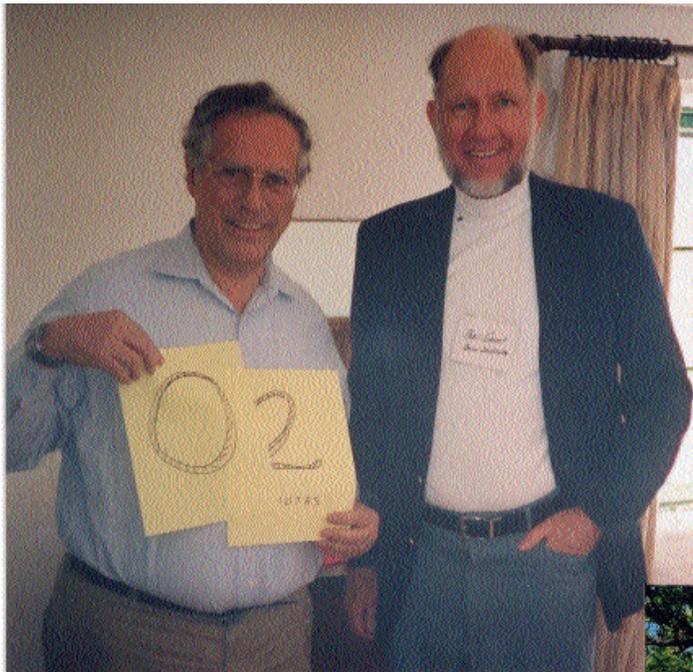
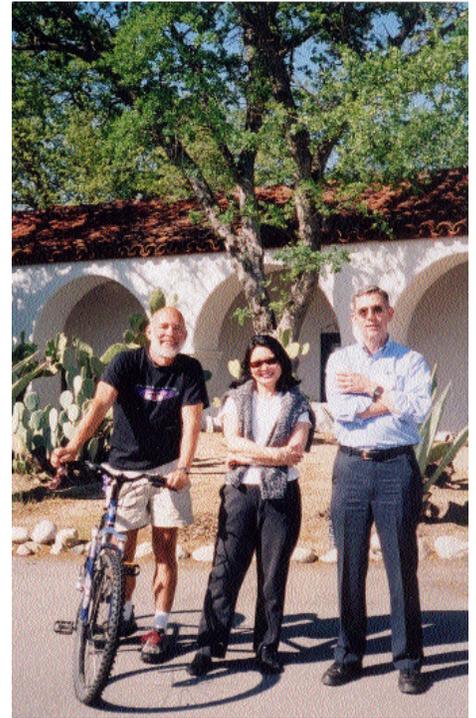
**Good food and good conversation in the Hacienda Restaurant**

Left to Right  
The photographer, Cheryl Genet, Hendrik G. van Oss, Aileen Ichikawa, Bill Shireman, Gjal Huppel, and Gifford Pinchot.

Left to Right  
Gifford Pinchot, Gjal Huppel, Russel Genet, Bill Shireman, Hendrick van Oss, Aileen Ichikawa.

left to Right  
Pogo Davis, Mary Rose, Paul Raynault, Marquita Hill, Karl Ostrom, and Cate Gable.





**Working and Playing**

Patsy Northcutt and Libba Pinchot expend some virtual elbow grease on Patsy's presentation

Paul Raynault and Russell Genet pose with the dreaded "wrap it up" signs.

Bill Shireman demonstrates the required position when it becomes necessary to pray that one's last two hours of work didn't just vanish

Greg Voelm fresh from the High Sierras, with Aileen Ichikawa and Clint Andrews, enjoying the sun and fresh air during a break in the sessions.



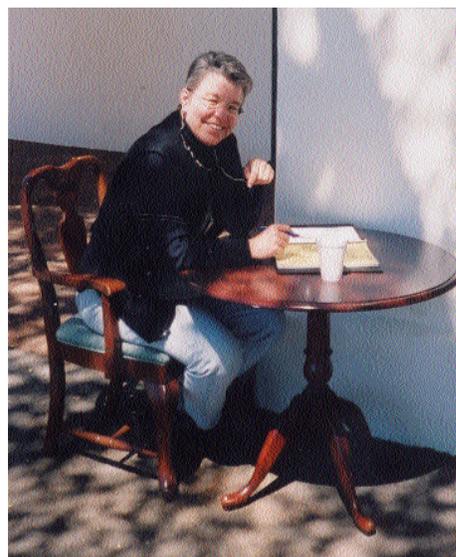
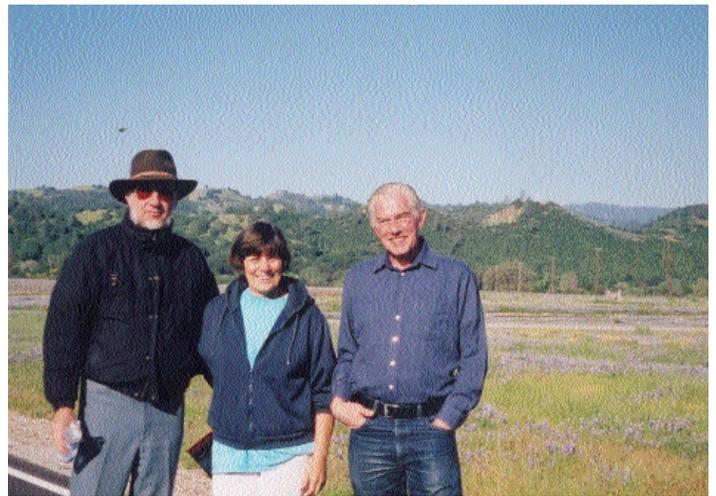
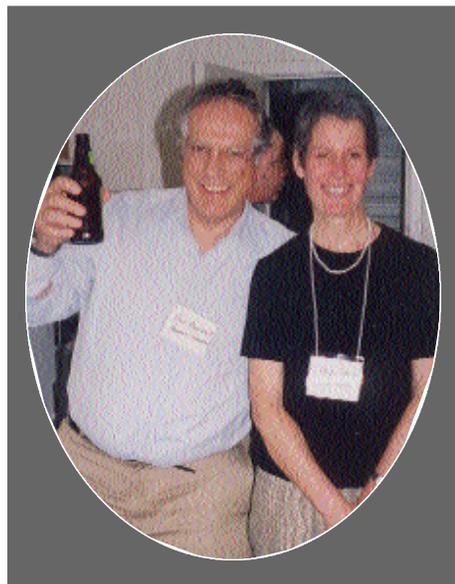
**Around the Hacienda**

Sharing perspectives at the Reception: Gjalt Hupples, Aileen Ichikawa, Dwight Collins and Bill Shireman

Making new friends: Paul Raynault and Pogo Davis

Enjoying the beautiful valley and the wild flowers: Russell and Cheryl Genet, Gjalt Hupples

Called by the great outdoors, Cate Gable sets up shop in the courtyard.



## Session 1

### Profitable Sustainability and the Future 500

---

#### 1.1

##### Welcome and Overview of Sessions

---

Dwight Collins  
*President*  
Collins Family Foundation  
Dwight.Collins@verizon.net

---

In this gathering, we have brought together a group of people who are thought leaders in the arena of sustainable business. They share a common perspective that profitable sustainability is a vehicle with which we can take a big step forward on our path to a sustainable planet. They represent a broad array of roles including:

- Directors of Sustainable Development for major companies
- Entrepreneurs starting up companies to produce and services that will move us toward a sustainable economy
- Venture capitalists who match financial capital with the entrepreneurs above
- Corporate accountability auditors who evaluate the performance of companies not only in financial terms but also in the stewarding of their human and natural capital, i.e., the triple bottom line
- Industry process experts knowledgeable in the details of specific production processes (e.g., cement production) and their impact relative to sustainability
- Academics researching and piloting new tools (e.g., life cycle analysis (LCA) methods) for (1) setting targets relative to sustainable business operation, (2) supporting new management processes for moving companies toward these targets, and (3) measuring business performance relative to these targets
- Sponsors of innovative MBA programs that thoroughly integrate sustainability with traditional teaching materials and methods in the business disciplines of operations management, marketing, finance, and accounting



- Cultural evolution and behavioral scientists who are looking at ways we can draw on the wisdom of these disciplines to better understand our current human condition and make our business culture sustainable over the very long term
- NGOs working in a variety of additional ways to promote sustainable business

We hope this retreat will generate more excitement over the role that profits can play in making our culture sustainable. A key objective is to gain new insights and discover new synergies around ways the knowledge and skills we each bring to this gathering can be pooled to accelerate our progress. We hope the experience will strengthen our commitment to sustainability. Finally, we hope this gathering leads to new friendships and further interchanges among the attendees.

## Session 1

### Profitable Sustainability and the Future 500

---

#### 1.2

##### The Things We Wish Were True, and the Things That Are True

---

Opening Remarks:

Bill Shireman  
*President and CEO*  
The Future 500  
bill@globalfutures.org

---

If we wish to cultivate a sustainable economy, it is first important to separate the things we wish were true, from the things that are true.

For example, we wish that building an environmentally sustainable company increased profits. We wish that building a company on a foundation of integrity led automatically to higher customer loyalty, sales, and profits. But the reality is that sometimes these attributes benefit the company, and sometimes they don't. Moreover, often all a company really needs to do is to create the impression that it has these attributes. Creating the impression is often cheaper than creating the reality.

Yet despite this, some argue that corporate sustainability is a matter of enlightened self-interest. Companies that profit sustainably will excel in the marketplace, they say.

Others argue that corporate sustainability is a matter of morality. Companies that fail to profit sustainably are immoral and should be condemned, they say.

The first view is based on the premise that those companies that act in a sustainable manner will somehow naturally outperform those that do not. Unfortunately, it's not that simple. Advocates who claim perfect alignment between what is right and what is advantageous come across as either naïve or dishonest to people making real business decisions.



The second view is based on the premise that it is possible for a company to take a principled stand, and voluntarily pay a set of costs that its competitors refuse to pay. But in a competitive economy, no company can long survive if it voluntarily takes on significant costs while its competitors fail to do so. Principled or not, the company will fail.

Thus, a company that blindly pursues sustainability, with no eye to the bottom line impacts, will fail well before it is able to contribute significantly to society as a whole. And a company that blindly ignores sustainability, with no eye to its impact on the larger whole, will undermine the long-term interests of the society it serves.

For these reasons, corporate sustainability is not about enlightened self-interest, or morality. The question is not whether a company is becoming more sustainable. The question is whether its people want it to be, and are willing to act in concert with others, outside the company, to create the conditions where it can become more sustainable.

Corporate sustainability is an objective to seek. If we are to reach it, we must be practical, pragmatic, and honest. We must be less determined to preach and teach, and more determined to learn, and then to act on what we learn. One way to learn is to answer a few simple questions, honestly:

## Session 1

### Profitable Sustainability and the Future 500

---

#### 1.2 (CONTINUED)

##### The Things We Wish Were True, and the Things That Are True

---

Opening Remarks:

Bill Shireman  
*President and CEO*  
The Future 500  
bill@globalfutures.org

---

- Does corporate sustainability benefit a company's bottom line?
- When does it impose a net cost on the company's bottom line?
- And how can we align the short-term interests of business, and the long-term interests of society and the environment, so that they are positively correlated? How can we cultivate an economy where advances in one lead to advances for the others?

Then, once we know what we must change – once we know how we can change the signals, the systems of rights and responsibilities, to assure that those who create good benefit in the process, and those that create harm pay the costs – we must wait for the right moment to act.

Right now, and the years immediately ahead, may provide us with just such an opportunity. Three events have converged, to create the conditions for change:

The first event was Enron and the crisis of corporate accountability that followed.

The second event was September 11, and the war on terrorism that followed.

The third event was the war with Iraq.

These moments, when old institutions break down, are the times when the most momentous change happens. This retreat provides us with an opportunity to begin the process of change.

## Session 1

### Profitable Sustainability and the Future 500

---

#### 1.3

##### Triple Bottom Line Accounting & Metrics

---

Ed Quevedo  
*Director*  
Environmental Management and  
Sustainability Programs  
WSP Environmental  
edward.quevedo@wspgroup.com

---

The purpose of this discussion was to point the way to a new approach to corporate accountability which avoids the glib dismissal of substantive changes in governance proffered by soft terminology such as Corporate Social Responsibility, and such inadequate devices as the Sarbanes Oxley legislation from 2002.

The events of recent years have shown us that rigorous accounting does not necessarily satisfy our 'need' for accountability from our private sector organizations. What is needed, in full, is a reconsideration of the Social Contract, which is the prerequisite for a private firm's legitimate license to operate. In the context particularly of recent international developments, and the breaches of trust in the corporate sector, financial, social and environmental accounting must not lose sight of its role as transmitter of information as part of the democratization of civil society.

#### A Case Study

Consider this example: A small UK- based company has an annual turnover of \$5 million and operates at a pre-tax profit of 10%. Materials, utilities and wastes account for 30% of business costs. Given these facts, to increase its pre-tax profits by \$50,000, the company would have to increase its sales by \$500,000. However, applying environmental management accounting techniques could improve the company's resource productivity by at least 1% and deliver a profit increase of \$50 000. Since the profit is now 11%, any increase in sales would deliver even more profits.



This company, Bovince Limited, specializes in printing large-format posters for advertisement display boards, bus sides and bus shelters, and other point-of-sale display material. The company employs 57 people and is located in Walthamstow in east London.

In 1995, annual turnover at Bovince was about £3.6 million (\$5m), of which the cost of materials, utilities and wastes represented almost 51%. (US Department of Commerce data shows this is in line with the average for large & medium private sector firms.)

This indicates that, by applying triple bottom line management accounting techniques as part of its EMS, Bovince should have been able to achieve cost savings equivalent to 1.8% of its annual turnover. This would equate to cost savings of £64800/year (\$80,000).

In the words of a Senior Bovince executive:

*Accurate TBL accounting has given us new insights into the company's business costs and enabled us to identify valuable opportunities for cost savings. Improving our TBL performance and making the business more profitable are key elements in our drive towards achieving the company's sustainable development policy. We strongly recommend other companies to apply these accounting techniques to improve their resource productivity.*

– Tom Jacobs, CFO, Bovince Ltd

### **The Methodology: A New Accounting Approach**

Consideration of adoption of this kind of management technique requires only a different and more comprehensive method of accounting the assets of the firm. First, three books of account need to be acknowledged to exist. These are the three sets of assets that any human organization, from family, to a town, to a large multinational corporation, to the world's largest Super Power, has to apply to any challenge it may face:

1. Human Capital
2. Financial Capital
3. Environmental Capital

Using this model, the first task is to monetize these books of account. Typically, if monetized honestly, most private sector firms (and public sector and educational sector organizations as well, for that matter) will come to realize that, when combined, their stock of Human Capital and Environmental Capital is larger than its market capitalization, the typical measure of an organization's Financial Capital.

Next, a balancing of the books method is called for. This approach counsels that every decision maker in the organization is provided with tools adequate to perform, at least on a rough and ready basis, the following accountings:

- Each extraction of capital from the Human Capital account must be invested to grow the financial and environmental capital of the organization.
- Each extraction of capital from the Financial Capital account must be invested to grow the human and environmental capital of the organization.
- Each extraction of capital from the Environmental Capital account must be invested to grow the financial and human capital of the organization.

This is true triple bottom line accounting, and portends the necessary frame of mind to achieve true Corporate Accountability.

### **Another Dimension of the Dialogue**

Consider also this question: What is the biggest "corporate social responsibility" or sustainability challenge we, as citizens of the globe, face?

Well, I believe that it is neither Energy nor Population Growth, neither Pollution nor unsustainable patterns of Production & Consumption.

Although these are unquestionably significant challenges, the greatest challenge that we face, I believe, is our failure, to date, to develop any meaningful or successful set of tools to broadly propagate Peace. One metric for our performance in this key area might be the number of hours dedicated by organizations to allowing their employees to learn how to, and then to deliver instruction, in K-12 classrooms, as a part of a formal curriculum, teaching peace to our children.

And organizations might also ask themselves what internal responsibility they have, or external duty as a part of the Social Contract, to actively work to propagate Peace in their business dealings. I believe that there is both wonderfully fruitful ground for us to plough here for productive organizational development and innovation, and a manifest imperative on all of us to plough this ground.

Consider, please, in closing, these resounding words about the risks and limitations inherent in paying attention only to the financial dimension of sustainability:

"The gross national product includes air pollution and advertising for cigarettes, and ambulances to clear our highways of carnage. It counts special locks for our doors and, jails for the people who break them.

It grows with the production of napalm and missiles and nuclear warheads...

And if the gross national product includes all this, there is much that it does not comprehend. It does not allow for the health of our families, the quality of their education, or the joy of their play. It does not account for the beauty of our poetry or the strength of our love for each other, the intelligence of our public debate or the integrity of our public officials.

It measures neither our wit nor our courage, neither our wisdom nor our learning.

The gross national product measures everything, in short, except that which makes life worthwhile, and it can tell us everything about us-- except whether we are a good people. . . ."

Robert F. Kennedy, May 1968, Chicago  
Recommendations when moving forward:

- Dream Big
- Start Where You Are
- Use What You Have
- Do What You Can

**Session 1**  
Profitable Sustainability and  
the Future 500

---

**1.4**  
Sustainability - A United Nations  
Millennium Challenge

---

Jack Gottsman  
The Clarity Group  
jackgottsman@hotmail.com

---

One of the 15 United Nation's Millennium Challenges identified by futurists in business, academia, government and NGO's about three years ago was Sustainability. There is a global awareness and interest in being part of the solution to the question "How can Sustainable Development be achieved for all"?

Sustainability means something different to businesses, governments, education and NGO's in Africa, Asia and Oceania, Europe, Latin America and North America. The Delphi technique used by the United Nation's Millennium Project seeks input from 500 to 1,000 researchers, managers and policy makers to evaluate and prioritize global issues, and build alternative futures or scenarios of probable futures for sustainability. The scenarios are used by teams in 19 nodes (Africa, Argentina, Brazil, Canada, China, Czech Republic, Egypt, Finland, France, Germany, India, Iran, Italy, Japan, Kuwait, Russia, UK, USA, Venezuela) to facilitate dialog and planning to address how they can contribute to the achievement of Sustainable Development for all. An initial goal of these strategists and implementers is to change the dialog from "Why it cannot be done, to How are we going to do it?"



## Session 2

### Experiences and Case Studies

---

#### 2.1

##### The Greening of a Pulp and Paper Mill

---

Marquita K. Hill  
Department of Chemical Engineering  
University of Maine, Orono  
mhill@maine.edu

---

As a result of an eighteen-month strike in the late 1980s, International Paper's (IP) Androscoggin Mill in Jay, Maine found itself operating in hostile conditions in Jay and in Maine. The mill's environmental record was also considered dismal. In the early 1990s, new management decided to transform the Androscoggin from IP's worst environmental performer into its best. The initial emphasis was necessarily to establish and maintain compliance. Subsequently, it aggressively pursued pollution prevention efforts including cooperative work with a previously antagonistic Maine Department of Environmental Protection, found beneficial uses for previously land filled wastes, replaced most hazardous chemicals, and greatly reduced both its solid - and hazardous-waste generation. It also established symbiotic relationships: One is with a natural gas burning facility built on-site that provides a portion of mill steam demand. Another firm has operations on-site to collect carbon dioxide emitted by mill lime kilns to make paper coater and filler, which is partially purchased by the mill. Yet another firm operating partially on site uses mill organic material (previously waste) to make compost and other agricultural amendments.

In 1992, the Androscoggin established a public advisory committee (PAC) to advise management on operational and "big picture" issues. The PAC operated for ten-years, in later years emphasizing the application of sustainability criteria to mill practices. IP subsequently formed Community Advisory Committees at all of its integrated pulp and paper mills. IP also established a corporate position for Androscoggin's environmental manager. He became program manager for new environmental initiatives, and took ideas developed at the Androscoggin Mill along with new ones to other IP mills. The Androscoggin Mill became one of IP's most profitable facilities until a faltering econo-



my in 2002-2003 brought about the lowest paper prices in many years. Despite current problems IP is seriously evaluating a major investment to update a mill paper machines to make it more competitive with international competition.

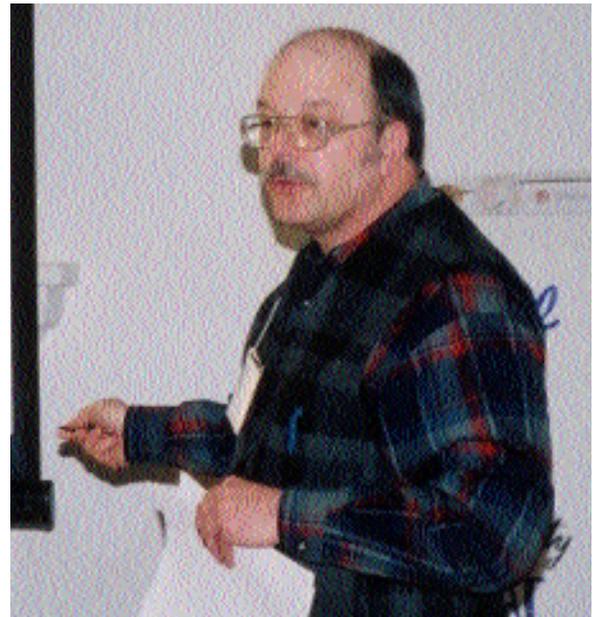
## Session 2

### Experiences and Case Studies

#### 2.2

#### Sustainable Cement and the Environment – the Good, the Bad, and the Ugly

Hendrik G. van Oss  
*Cement Commodity Specialist*  
 U.S. Geological Survey  
 Reston, VA 20192  
 hvanoss@usgs.gov



Hydraulic cements are the binding agents in concrete and most mortars. A typical concrete contains only about 11% by volume of cement powder; the rest being mostly fine and coarse aggregates such as sand and gravel. The most common hydraulic cement is Portland cement. About 1.7 metric tons (t) of raw materials (mainly limestone) are used to make 1 t of Portland cement, which in turn suffices for 7-9 t of concrete. Current world annual output of 1.7 billion tons (Gt) of hydraulic cement is enough for 12–15 Gt/yr of concrete, or more than 2 t/yr per person on the planet; concrete is the most abundant of all manufactured solid materials.

Portland cement is made by finely grinding together clinker (an intermediate product) and about 5% calcium sulfate. Chemically, clinker is about 65% calcium oxide (CaO), 22% silica (SiO<sub>2</sub>), and aluminum and iron oxides most of the rest. Mineralogically, clinker is about 70%–85% hydraulic calcium silicates, requiring very high sustained temperatures (1200–1450°C) to form from the component oxides, which are themselves formed from the high temperature breakdown of the raw materials. The most important breakdown reaction is the calcination of limestone into CaO and carbon dioxide:  $\text{CaCO}_3 + \text{heat (about } 950^\circ\text{C)} \rightarrow \text{CaO} + \text{CO}_2$ . The heat energy requirements for clinker formation are enormous: typically 3–6 million Btu/t clinker. Besides limestone, a great variety of geologic raw materials (e.g., clay, shale, and sand), as well as industrial waste products (especially slags and combustion ashes) can be burned in cement kilns to supply the requisite oxides. Although coal and petroleum coke are the dominant fuels in use, a huge variety of solid and liquid waste products, including used tires and hazardous wastes, can be utilized as fuels.

The main environmental issues related to cement include particulate emissions (CKD), CO<sub>2</sub>, nitrogen oxides (NO<sub>x</sub>) and sulfur oxides (SO<sub>x</sub>). Cement plants routinely capture essentially all of their CKD, but vary in its disposition (reuse as feed to the kiln, other uses, landfill disposal). Emissions of NO<sub>x</sub> are large but to some extent controllable. Emissions of SO<sub>x</sub> generally are small and self-scrubbing; scrubbing technologies are available to further reduce emissions. Cement plants are more or less tied with iron & steel complexes as the largest industrial sources of CO<sub>2</sub> emissions, although both are dwarfed by power plants and motor vehicles overall. Cement manufacture releases about 1 t of CO<sub>2</sub>/t clinker, about half of which is from the calcination reaction and the rest from fuel combustion.

In terms of profitable sustainability, the use by cement plants of alternative raw materials and fuels reduces the need to consume virgin materials and fuels, can in some cases reduce emissions and overall energy requirements, and can—especially if the plant receives tipping fees for waste materials and fuels—reduce production costs. Technological upgrades generally are aimed at reducing energy consumption and costs. Because cement manufacture is an energy- and materials-intensive process, its potential appetite for waste products is large and cement plants can thus become ideal drivers of industrial ecosystems.

## Session 2

### Experiences and Case Studies

---

#### 2.3

#### ConocoPhillips and Sustainable Development: Draft Sustainable Development Policy Statement

---

Jean C. "Pogo" Davis  
*Manager, Sustainable Development*  
ConocoPhillips  
pogo.davis@earthlink.net

---

ConocoPhillips is committed to sustainable development. We will uphold this commitment by striving to deliver consistently superior and responsible economic, environmental and social performance.

Sustainable development was first defined in 1987 by the United Nations World Commission on Environment and Development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Put simply, sustainable development is economic development that strengthens communities and protects the environment for everyone, now and in the future. We share the responsibility of sustainable development with business, governments, society and individuals throughout the world.

ConocoPhillips' commitment to sustainable development is about fulfilling our purpose to use our pioneering spirit to responsibly deliver energy to the world. Our core values of safety, people, integrity, responsibility, innovation and teamwork are the foundation for our purpose and our commitment to sustainable development. To us, this means providing safe, reliable, affordable energy and related products and solutions that meet the changing needs of our customers while:

- Respecting the local and global environment,
- Contributing to social progress and the quality of life wherever we operate, and
- Providing our shareholders with an attractive return on their investment.



We believe that living up to our core values and our commitment to sustainable development requires that we:

- Integrate economic, environmental and social considerations into our strategic planning, decision making and operations processes, and apply them to create additional value and growth;
- Maintain an ongoing dialogue with our stakeholders so that we understand and respond effectively to their diverse and evolving expectations;
- Assess and manage the impact of our operations, products and services through their full life cycles; and
- Measure our performance in economic, environmental and social terms; pursue clear, challenging targets; and publicly report on our progress.

Through this commitment, ConocoPhillips will be fully accountable to all of our stakeholders; we will be better able to achieve long-term, profitable growth for our company; and we will help create a better world for current and future generations.

### Session 3

## MBA Programs for Profit & Sustainability

---

### 3.1

#### Bainbridge Island Graduate Institute: Business Leadership for Sustainability

---

Gifford Pinchot  
*Chairman*  
Bainbridge Island Graduate Institute  
Gp3@pinchot.com

---

Business is the proximate cause of many of the threats to sustainability, but it is also the most rapidly responsive and creative of the major institutions in our society. There are many ways to change business, government regulation, consumer choice, socially responsible investment, etc. Most neglected of the ways is the choices people make at work to serve their values.

Traditional business schools train students to focus on making money, not serving their other values. Graduates leave with a much narrower sense of responsibility than they came in with. The mission of The Bainbridge Island Graduate Institute is to prepare leaders from diverse backgrounds to achieve environmentally and socially responsible business success. We mean this broadly, not only to prepare our own students but to partner with other schools to help them incorporate environmental and social responsibility in their curriculum and thereby to change business practice generally.



The market for people who need a business education, but want their work to serve their values is large and underserved. We know this because we have found it relatively easy to recruit students and faculty despite the start up nature of our school. Our faculty includes Amory Lovins, John Eherenfeld, and Elisabet Sahtouris. Our students include an HP sustainability manager, a former Shell sustainability manager, the chairman of a public water and power utility, etc.

Sustainability requires innovation. How can we manage it? First recognize that innovation does not happen according to the plan. For this reason, we cannot bet only on ideas, we have to bet on the ability of the entrepreneurs and intrapreneurs who are making the innovations happen to find ways to make it work when the plan fails. In innovation, faster learning and adapting beats better planning. This is why venture capitalists say, "I would rather have a class A entrepreneur with a class B idea than a class A idea with a class B entrepreneur. Companies who would make sustainability work need to create a supportive environment for the intrapreneurs that make sustainability happen.

## Session 3

### MBA Programs for Profit & Sustainability

---

#### 3.2

##### Sustainable MBA Programs

---

Rick Bunch, *Director*  
Business Education, Sustainable Enterprise Program  
World Resources Institute  
rickb@wri.org

---

Employers are widely held to be the most important customers of business schools: they buy the product when they hire the graduates. A business school's national ranking rises and falls with its ability to attract top employers who pay high salaries. Business schools consequently hasten to respond to employers' needs.

The growing movement toward sustainable practices in business therefore has broad implications for the management education agenda. To explore and respond to these implications, WRI launched its BELL (Business-Environment Learning and Leadership) program in 1994. BELL has "greened" hundreds of business school courses in North and Latin America and China by creating environmental curriculum and training professors how to teach it. Complementing classroom learning, WRI's Environmental Enterprise Corps has put hundreds of students into service supporting small and medium environmental enterprises in developing countries. EEC makes sustainable enterprise a more tangible and achievable career direction by allowing students to apply theoretical knowledge in the real world, helping sustainable businesses get on their feet. Finally, WRI and Aspen ISIB's biennial report, *Beyond Grey Pinstripes: Preparing MBAs for Social and Environmental Stewardship*, is the only resource that rates MBA programs around the world on how comprehensively they address social and environmental topics. By doing so, it spurs competition among business schools to strengthen their programs.



The Pinstripes series has established that MBA programs around the world are accelerating infusion of sustainability topics into their curricula and research. The overall level of activity is still low, but the growth rate is high and there is great diversity in the kinds of innovations being implemented.

Unfortunately, according to students, professors and program staff, even companies with ambitious social and environmental goals seem not to evaluate whether candidates for management positions can help them meet those goals. Regardless of whatever intellectual or values-based interest students may have in sustainability, quite rationally they hesitate to allocate class time to subjects that do not help them get a job or advance as their careers unfold.

A crucial factor, therefore, to the continuing growth of sustainable management education, is for businesses to communicate better with business schools and students about their sustainability objectives and training needs. How can businesses better support nascent efforts by business schools to prepare future managers to run sustainable businesses? What skills, knowledge and experience related to sustainability are most important to employers of business school alumni, and in what parts of the organization? What can businesses do to identify, evaluate and recruit management-job candidates most able to guide the firm toward sustainability? Over the next year, WRI will implement a new project intended to explore these questions. We will present our findings, seek dialogue and implementation partnerships during the IE 2004 conference.

## Session 4

### Profitable New Ventures for a Sustainable World

---

#### 4.1

##### Case Study: Thai Photovoltaics, Ltd.

---

Walt Ratterman  
*Vice President*  
Thai Photovoltaics, Ltd.  
TRCWalt@aol.com

---

With my electrical contracting background and volunteer work experience with Knightsbridge International ([www.kbi.org](http://www.kbi.org)) taking relief supplies to countries such as Afghanistan, Cambodia, Burma, and Nicaragua, I have nurtured a belief that there is a tremendous need to provide electricity to the poorest on our planet so that they might improve their quality of life.

This is coupled with my recent experiences serving as an international technical advisor to Green Empowerment, an NGO out of Portland Oregon dedicated to promoting community-based renewable energy projects internationally to generate social and environmental progress.

This goal of providing electricity to these 2 billion people has been adopted by many of the world organizations. If pursued in the same fashion that the developed world has provided itself with power, we are presented with an ecological nightmare, and an extension of an already unsustainable world energy situation.

There are many reasons why electricity generated from the sun needs to have a prominent role in powering the developing countries. With this belief structure, I set out to learn more about solar power and how this lofty goal could be attacked. As part of this endeavor, I continued to investigate power delivery options throughout the world as part of my work with Knightsbridge International. I enrolled in and completed a Masters Degree in Renewable Energy, and I very fortuitously met up with a group of like-minded individuals, forming Thai-Photovoltaics, Ltd. (TPV) (see [www.thaiphotovoltaics.com](http://www.thaiphotovoltaics.com)).

TPV is made up of a group of people with the same beliefs I outlined above. I am now part of this group. One lesson



I learned in studying power systems in the developing world is that projects that are strictly donor based (give-away programs), do not work. People need their dignity, and the projects need to be sustainable. The best way to accomplish this is through projects responsible for making a profit.

TPV (when it gets in operation) manufactures solar panels, with the developing world market in mind. We have studied the manufacture of solar panels and have chosen a process (a-Si) that can produce the best "watts per dollar". We are in Thailand because Thailand is central in our selected developing world market, and has excellent resources in terms of qualified personnel and access to the raw materials we need to be able to produce solar panels at the lowest possible cost.

Our commitment to the developing world is illustrated by our plan to donate 5% of our output in solar modules to qualified charities, with another 5% of our modules being made available on a "cost plus" basis to qualified NGO's. (This is enough solar panels to power 1 rural school or clinic per day.)

TPV has been in the planning stages now for nearly 2 years. We have the factory building, top level personnel at our disposal and ready to go, and arrangements made for raw materials. Further financing is now being sought to close the loop and purchase the necessary manufacturing equipment. TPV is only one of a handful of "pure play" solar power investment opportunities in the world, allowing accredited investors the ability to focus a portion of their investment funds in a company that exists to demonstrate how helping the world to expand electricity usage in a sustainable fashion will be a profitable venture.

## Session 4

### Profitable New Ventures for a Sustainable World

---

#### 4.2

#### Using Marketing Communications to Get the Word Out

---

Patsy Northcutt  
*Producer/Director*  
Northcutt Productions  
patsy@northcuttprod.com

---

The visibility of sustainable business activities can make them more profitable. This paper introduces two ideas for making it economically viable, even profitable, to create quality communications that promote sustainability internally and externally.

The first approach is to create programming that is so entertaining and informative, that it takes on a life of its own. There is a shortage of quality media that conveys basic concepts in eco-design, resource efficiency and corporate sustainability. If your organization has a great story to tell and does it in a way that is useful, there is the possibility that your message could be of interest to others and bring with it strong PR and added visibility.

Sustainability projects within organizations are rarely given much, if any, communications budget. If directors of these projects could define a solid external audience and map the natural distribution path, they could potentially align with corporate marketing and visa versa, to create entertaining and informative communications. These communications could be designed to help projects move forward internally and be so useful, that people outside of the company would want to show it to their friends and colleagues.

Northcutt Productions has had two experiences of this kind with videos we produced for clients. The first was an award winning green building video for the University of Texas, Houston: <http://www.northcuttprod.com/natural.html>. The second was for an award winning video we produced for Intel. Its purpose was to inspire employees to find alternatives to driving to work: <http://www.northcuttprod.com/transportation.html>. Both projects had a natural appeal to external audiences



and as a result, were used widely as an educational tool. In turn, they brought excellent PR to UT-Houston and Intel.

#### Map the Benefits

List the internal results that you could gain through effective media communications, such as widespread adoption of new behaviors and attracting and keeping good employees. Externally, people and organizations may follow in your footsteps, making you a leader. You may also gain good PR with customers, press and the community.

To avoid any confusion with green washing, it is important that the benefits be self-evident. This is not advertising and should not have a sales or marketing tone. The PR goal is for the program to self distribute, because it is so useful. Make it fun and informative so people will want to show it to their friends.

#### Tip

Before pursuing a media project, take action to raise internal awareness and get a groundswell of internal enthusiasm. Put a list of your activities and accomplishments in a central location, like your extranet and show your colleagues.

#### Audience

There needs to be solid internal and external audiences and a convenient method of distribution in order for external PR to be a natural outcome. Know your audience. Is there a need to communicate a message broadly within your organization? Who would you communicate to? Why? How? Where and when would you be able to get their attention to listen? At their computer via an email link? In a meeting? Video or DVD to take home?

## Session 4

### Profitable New Ventures for a Sustainable World

---

#### 4.2 (CONTINUED)

##### Using Marketing Communications to Get the Word Out

---

Patsy Northcutt  
*Producer/Director*  
Northcutt Productions  
patsy@northcuttprod.com

---

Are there groups of people outside of the company that would inherently be interested in your story? What are the possibilities? Is there natural networking and distribution potential among them for your program?

#### **Caution**

People are suspicious of green washing, and rightfully so. The benefit of an isolated case study is that it does not make company-wide claims, but do consider if the company is ready for green publicity.

#### **Share the Costs**

The second, more economical approach to creating media communications about sustainability projects is to partner on shared aspects. In the examples above, both the Natural Step elements of the green building video and the transportation alternatives in the Intel program were elements that could have been co-produced by many organizations. Doing so, would enable higher quality at a lower cost. There are added complexities to collaborations, but it can be a big win-win.

## Session 4

### Profitable New Ventures for a Sustainable World

#### 4.3

##### The Future 500 CAP GAP Audit

Aileen Ichikawa  
*Senior Consultant*  
 Global Futures Foundation & Future 500



The Corporate Accountability Practices (CAP) Gap Audit is a consolidated assessment that ranks corporate performance in accountability according to the criteria of 20 leading systems of standards in a single, easy-to-use tool. Via a 180-point survey, indicators of risk are flagged, and delivered in concise high-impact executive report, and an on-site presentation. The CAP Gap Audit consolidates key elements of all leading systems for ranking corporate governance, accountability, quality, social responsibility, and environmental sustainability, including:

- New York Stock Exchange corporate governance standards (NYSE)
- Goldman Sachs Best Practices recommendations
- Malcolm Baldrige National Quality Award
- Global Reporting Initiative (GRI)
- Social Accountability 8000 (SA 8000)
- AccountAbility 1000 (AA 1000)
- Boston College Center for Corporate Citizenship (BCCC)
- International Chamber of Commerce (ICC)
- Interfaith Center on Corporate Responsibility (ICCR)
- Dow Jones Sustainability Index
- Domini Social Investments
- Calvert Group
- Innovest
- Organization for Economic Cooperation and Development (OECD)
- Coalition of Environmentally Responsible Economies (CERES)
- Caux Roundtable
- Working Assets/Co-op America (formerly Council on Economic Priorities - CEP)

The CAP Gap Audit is the product of a three-year Future 500 project supported by member companies and organizations such as Mitsubishi Electric, Nike, Det Norske Veritas, ERM, Manning Selvage & Lee, Pitney Bowes, WSP, Coca-Cola, and Coors Foundation. It is designed to improve accountability and, in the process, boost corporate adaptability and market responsiveness, and enhance the economic, social, and environmental "triple bottom line." Features of the CAP GAP Audit include:

- Takes a 180-point inventory of corporate assets and liabilities in corporate accountability, responsibility, and sustainability.
- Presents the results in a graphically rich easily understood executive report.
- Rates the company's performance against criteria of 20 leading indicators - 10 main and 10 referred indices - to represent a comprehensive and wide array of a company's stakeholder concerns.
- Grades the company overall from "A" to "F", and within five stakeholder categories: shareholder/governance, workplace, community, marketplace, and environment.
- Measures corporate readiness across six categories: leadership, issues management, stakeholder management, strategic planning, communications, and measurement.
- Pinpoints assets & liabilities affecting 11 categories of cost/operational efficiency.
- Identifies how to leverage corporate assets to improve 7 categories of brand performance.
- Is delivered in a one-hour summary presentation or half-day workshop to give you the information you need to make sound decisions.

Companies report that the CAP Gap Audit provides these benefits:

## Session 4

### Profitable New Ventures for a Sustainable World

---

#### 4.3 (CONTINUED)

##### The Future 500 CAP GAP Audit

---

Aileen Ichikawa  
*Senior Consultant*  
Global Futures Foundation & Future 500

---

- Identifies broad areas of a company's stakeholder concerns
- Reduces risk of accountability crisis
- Pinpoints the least-cost compliance path
- Increases knowledge
- Improves preparation and planning
- Increases shareholder and stakeholder confidence
- Improves corporate reporting and third party ranking
- Positive active step toward overall corporate accountability
- Reduces regulatory risk
- Provides strategic and management insights
- Efficient and quick to deploy project with substantial return

#### Contact

The Future 500  
415 Jackson Street  
2nd Floor  
San Francisco, CA 94111  
Ph: 415-364-3803  
Fax: 415-693-9163  
[www.future500.org](http://www.future500.org)  
[info@globalfutures.org](mailto:info@globalfutures.org)

## Session 5

### Approaches & Tools for Profitable Sustainability

---

#### 5.1

#### Advancing Applied Industrial Ecology by Improved Operational Modeling

---

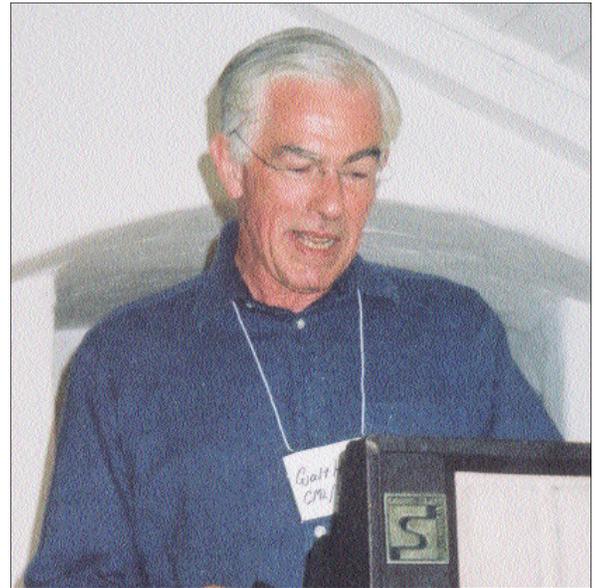
Gjalt Huppes  
Center of Environmental Science, Leiden University  
huppes@cml.leidenuniv.nl

---

For arriving at profitable sustainability a clarification of concepts is required and operational methods for combining the underlying concepts of values and cost and of environmental quality. Simple win-win cases exist when available superior technologies have not yet been implemented. For given technologies, win-win situations do not exist. Then environment and economy are opposed. For profitable sustainability, focused research and development is required, with clear sustainability aims.

When for some new products or investment options their market value and environmental impact are to be linked, this relation may be expressed as a ratio, as eco-efficiency or cost-effectiveness. The computation of this ratio is based on a quantified specification of net market value, as proceeds minus cost, and a similar specification of environmental impact, as a change in environmental quality. For both, a life cycle perspective is appropriate, leading to Life Cycle Costing, not further worked out here, for the value part and to some form of Life Cycle Assessment, as in LCA, for the environmental part. When making the environmental systems analysis, as operational form of Industrial Ecology, quite some differing approaches may be legitimate. Therefore, operational methods that can be used in public discussions and stakeholder discussions not only depend on science but also on consensus. The UNEP-SETAC Life Cycle Initiative has been set up with just this goal; getting to a consensus on methods and data in environmental analysis and management.

The modeling involved in applied industrial ecology cannot be detailed for all parts of the system, as the system of most complex products involves the world. Some parts, of central importance for the decision to be made,



should be specified in detail, by adequate process descriptions, linked to engineering knowledge. Other parts may be linked into the model more aggregately, by using monetary Input-Output Analysis with environmental extensions, as IOA. Such IOA systems, on a one-country basis, have been developed and are being extended for the USA and the Netherlands and, with less detail, for a number of European countries and Japan. These country systems are not yet linked. The environmental and cost scores of many technologies and products not only depend on current technologies but also depend on developments that may take place by the time and during the time they function. These can be depicted in the same framework, as scenarios. An example is the methanol based fuel cell for cars as considered by DaimlerChrysler. This technology may be profitable and environmentally attractive in a system where methanol is widely produced as an intermediate feedstock and where a methanol distribution system to petrol stations is set up. Linking detailed modeling with such scenarios, and with a society-wide IOA background system is possible in principle now, as Integrated Hybrid Analysis. The road towards operational implementation has started but still needs much joint effort and support.

For further information on these subjects see the websites of the UNEP-SETAC Life Cycle Initiative: <http://www.uneptie.org/pc/sustain/lca/lca.htm> . For further information on Eco-Efficiency, see the website (still under construction) of the E-E Conference in March next year: <http://www.eco-efficiency-conf.org/>. Finally, on the subject of Integrated Hybrid Analysis, see the website of CML, especially the recent publications, at: <http://www.leidenuniv.nl/cml/ssp/>

## Session 5

### Approaches & Tools for Profitable Sustainability

---

#### 5.2

#### Simulating the Environmental Implications of Organizational Behavior

##### *Agent-based Modeling in Industrial Ecology*

---

Clinton Andrews  
E.J. Bloustein School of Planning & Public Policy  
Rutgers University  
cja1@rci.rutgers.edu

---

I describe our current research project applying agent-based modeling techniques to problems of organizational behavior. This is an exciting computer simulation tool that allows safe, in silico investigation of principal-agent problems with environmental consequences. Using an object-oriented programming language and building on the Ascape software library, we create software agents (employees, stakeholders) and allow them to interact with one another and their external environment. Structures, consisting of formal organizational hierarchies and informal institutional networks, slowly adapt as agents interact, following structuration theory. The empirical basis for the models comes from a set of case studies of firms.



Model development has started with the case of the single-establishment firm, and future elaborations include branch plants, supply chains, and sectors. This type of modeling offers more generality and more of a prescriptive stance than case studies, and richer detail and more policy levers than aggregate sectoral analyses of organizational behavior. Further details are available at <http://radburn.rutgers.edu/andrews>.

## Session 5

### Approaches & Tools for Profitable Sustainability

---

#### 5.3

##### Analyzing Profitable Sustainability Potential: An Experiment

---

Paul Raynault  
*President*  
The Raynault Foundation  
paul@casualpc.com

---

Weekenders, Ltd. produces and sells women's apparel using the home party marketing and sales business model (similar to Tupperware and Mary Kay Cosmetics). It was founded in 1985, is a private company, and currently has annual sales of \$250 million. Headquartered in Toronto, it services customers in Canada, the US, the UK, Australia, Germany, and the Netherlands using a network of over 25,000 sales representatives. Weekenders designs and produces new fashions for two seasons each year.

The speaker, Paul Raynault, is a financier of the company and serves in the role of troubleshooter in all aspects of the company's operation. Over the past 6 months, Paul has been overseeing the staged installation of a corporate-wide enterprise resource planning (ERP) system. This system will enable Weekenders managers to have access to much more comprehensive, accurate, and consistent data about how the company is performing. Types of data include customer order status, inventory status, equipment maintenance status, raw materials purchasing, bills of material, production orders and schedules, and shipment orders.

When this ERP system is in place, Paul will begin the design and installation of decision support software to optimize the supply chain so as to maximize the firm's profits. Paul has engaged Colbridge & Company (Dwight Collins) to provide guidance and expertise in this design and installation effort. Decision processes to be optimized include strategic and tactical planning, short term production and distribution scheduling, and release of raw material orders.



In addition to this core consulting activity, Dwight is supporting Paul in a project to identify, evaluate, and execute profitable sustainability opportunities at Weekenders. At this time, they have begun to develop a systematic methodology for conducting this activity. It will include questionnaires and a systematic exploration process to be carried out with members of the Weekenders management team. The team will examine the key production processes including weaving, dyeing, cutting, sewing, and shipping of product between plants and to the customer. For opportunities that are identified, prescribed tasks and templates will be developed to aid in the design, analysis, and implementation of changes.

Paul and Dwight expect to conduct this project around profitable sustainability over the next 10-12 months.

## Session 5

### Approaches & Tools for Profitable Sustainability

---

#### 5.4

#### Building Community Collaboration to Support Sustainable Prosperity

---

Karl Ostrom, *Executive Director*

Mary Rose, *Organization and Resource*

*Development Coordinator*

Network for Business Innovation & Sustainability/NW,  
Albers School of Business & Economics,  
Seattle University

karlostrom1@attbi.com

---

The development rate of sustainable business practices can be exponentially increased by support from community networks of strategic stakeholders. While the accountability of business to employees, communities, consumers and ecosystem health is increasingly recognized as a driver for advancing sustainable business, the proactive role of these and other stakeholders in propagating sustainable business practices and supporting their profitability is less developed.

The Network for Business Innovation and Sustainability (NBIS/NW) is developing a model that addresses this challenge. It is mobilizing a unique collaboration of business leaders, educators, scientists, non-profits and professionals to develop and support triple bottom line tools, initiatives and strategies for businesses in the Northwest.

NBIS/NW strategies for increasing sustainable business innovations include:

- Facilitation of the sharing of best practices
- Catalyzing and enabling increased business to business collaboration
- Working with higher education institutions to increase the interdisciplinary education capacities focused on sustainable business development
- Linking sustainable business projects with the teaching and research capacities being developed in higher education institutions



- Seeking collaborative policy solutions between business and government that facilitate eco-efficient energy and material use and reward sustainable practices for their contribution to the public good
- Developing informed relationships between businesses and non-profits that profitably reward sustainability in the marketplace
- Facilitating membership activity through building an online information system that includes opportunities for collaborative problem solving, knowledge management, a talent bank and resource links

These strategies help overcome such common barriers to business change as

- Lack of access to innovative ideas, practices and technologies
- Suspicion of the environmental movement and fear of exposure
- Wariness regarding regulation that may impede business profitability
- Costs of transitioning to more environmentally and socially appropriate practices
- Lack of empowerment of change-seekers within the business arena

The Network for Business Innovation and Sustainability benefits from the collaborative support of other organizations and seeks to share its model and growing knowledge base for mutual support and replication wherever it can be helpful.

## Section 6

### Stakeholders & Corporate Accountability Audits

---

#### 6.1

#### Extended Producer Responsibility (EPR) Versus Shared Responsibility

---

Cate Gable, *Senior Consultant*, Global Futures  
Foundation & Future 500, and  
*President*, Axioun Communications, Intl.  
categable@aol.com

---

The life of a product begins in the hands of the earth in raw materials. These materials are formed by a variety of suppliers into component parts which are passed on to assemblers who produce a finished product—a computer, let's say. The computer travels to a retailer who distributes it to other retail consumer sites manned with sales people. Eventually a consumer buys the product and takes it home where it is put into use.

The consumer determines when a product has reached the end of its useful life. And it is the consumer who has the choice of disposal of the computer in a variety of ways based on his or her values, options, and motivation. A discarded product that makes it to a recycling center or neighborhood computer shop is either disassembled for its component parts or refurbished. If it lands in the garbage, it becomes part of the waste stream and is returned to the earth. This simplified product biography illustrates a closed system.

Each of these actors—whether component part maker, consumer, or landfill operator—has a role to play, a set of core skills (and behavioral impacts), and a particular function in the life of a product. These actors, their roles and functions, and the product itself are all part of a system. What is the best way to green this system?



I argue that it is not the responsibility solely of the product producer—in the case of a computer, for instance, the computer manufacturer—to 'take back' its product. That product is made of many parts created by many suppliers; and the special skills of the manufacturer may not necessarily include take back functions like transportation, storage, disassembly or refurbishment. A multi-stakeholder responsibility approach argues that all players have a special role to play in greening the system. The trick is to find a way to enhance each player's core skills to transform the system. The trick is to agree to share the responsibility.

In nature there is no waste because all players in the system participate in creating maximum efficiency.

## Section 6

### Stakeholders & Corporate Accountability Audits

---

#### 6.2

#### The Role of Third Parties to Verify Sustainability

---

Bill Sullivan  
*Director of Marketing, DNV Certification*  
bill.sullivan@dnv.com

---

Companies can demonstrate compliance or adherence to a given set of rules, criteria or regulations in one of three ways:

- 1 Self Declaration** This is the "trust me" approach in which stakeholders are asked and expected to believe any and all statements made by a company without objective evidence or verification of compliance. Historically this does not work and gives rise to two other approaches.
- 2 Second Party Verification** Under this scenario, individual stakeholders perform their own verification, typically a compliance audit to determine if there is indeed compliance with given criteria. This process results in multiple audits by multiple stakeholders, which is expensive and time consuming, and disruptive to the day-to-day business operations of the audited company.
- 3 Third Party Verification** This is a verification or an assessment audit performed by a party independent of both the company and the stakeholders. Verification results can be shared with all stakeholders, making this an efficient and cost effective process. With nearly 500,000 certificates worldwide, ISO 9000 certification is probably the most widely accepted example of third party verification and certification.



So how can stakeholders have confidence that a given company's Sustainability Report is valid, accurate and credible? DNV has developed a Sustainable Report Verification Protocol (SRVP). Based on GRI Guidelines, assessments performed using the SRVP will serve to validate the contents of the Sustainability Report and thereby increase Stakeholder confidence in the contents of the report.

## Section 6

### Stakeholders & Corporate Accountability Audits

---

#### 6.3

### Social Returns Analysis in Investment Decision Making

---

Sara Olsen  
Founding Partner  
SVT Consulting  
sara@svtconsulting.com

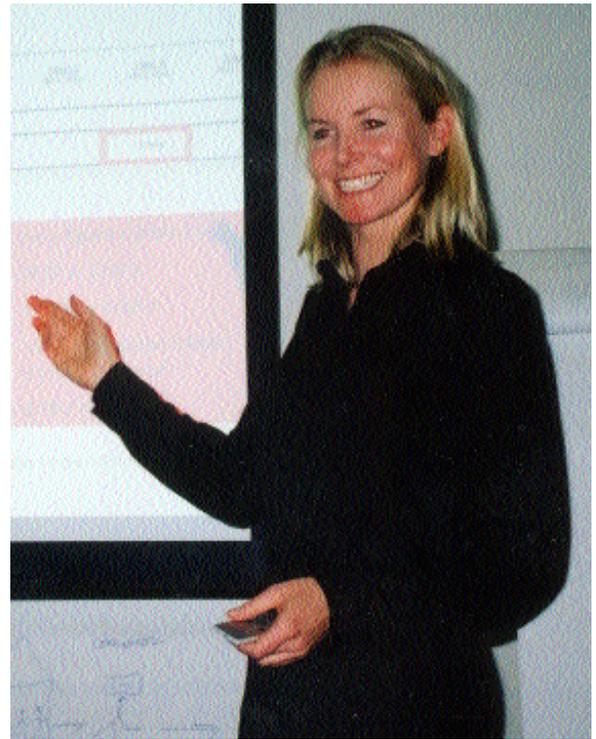
---

This case study addresses Social Returns Analysis™, a technique for identifying key drivers of environmental and social value, and modeling both the financial and social benefits of investment decisions. The example discussed is of a PUR foam recycling technology company, Mobius Technologies. Mobius used the analysis to identify its environmental value proposition, and communicate it to corporate strategic partners and investors in clear terms that facilitated investment and collaboration.

With the Social Returns Analysis™ tool, SVT was able to help Mobius demonstrate to potential investors the quantifiable and monetizable social and environmental benefits of investing in Mobius, above and beyond its pure financial return.

In this instance, Mobius had four value propositions:

- **Plastic recycling** Mobius powder replaced 10% of the chemicals used to make foam, and foamers recycled 50% of their waste.
- **Commodity savings** Mobius produced savings in raw materials, energy consumption, and landfill costs.
- **Emissions reduction** Mobius' reduced emissions led to improvements in human health, air quality, water quality, plant and animal life, and the ozone layer
- **Emissions credits** These provided a way of monetizing the benefits of emissions reductions. Mobius' emissions savings contributed to a quantifiable "Social Return." This was measured in metrics such as SROI (Social Return on Investment) and SIRR (Social Internal Rate of Return).



All of these value propositions translate into direct financial benefits for manufacturers and deliver important ecological and social benefits.

In its broader usage, the Social Returns Analysis™ tool can generate additional insights and penetrating analysis results in these areas:

- **Theories of change** Provides outline of key cause/effect assumptions underlying investment decision errors and increasing mission clarity
- **SROI** Provides a framework for valuation of major projected or actual impacts
- **Use/cost analysis** Designing the most cost effective social management information system reflecting data credibility standards of key audiences
- **Scorecard** Provides a framework for ongoing social information management
- **Scenario planning** Used to foresee and avoid or minimize conflicts between financial and social performance

**Session 7**  
Panel: Achieving Sustainability  
in the Long Term

---

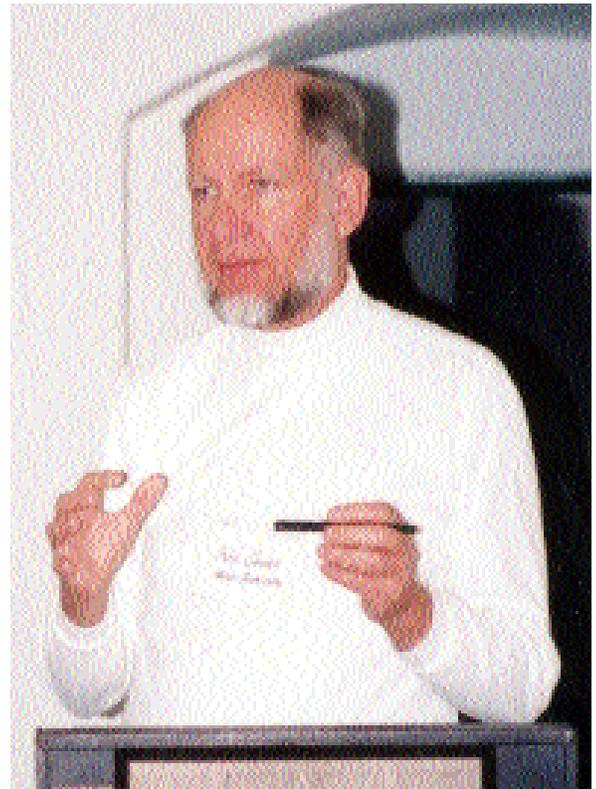
**7.1**  
Introduction of Topic & Panel Members

---

Russell Genet  
*Director*  
Orion Institute  
russmgenet.aol.com

---

The previous sessions in this Profitable Sustainability Retreat rightly focused on the here and now—activities that are already underway or could be undertaken shortly that will make our human presence on planet Earth more sustainable. In this final session, we will consider what it might take, in the much longer run, to allow humans to inhabit this planet. As Peter Corning will make clear, agriculture, civilizations, and our present complex system all arose during a period of unusual warmth and tranquility, a respite in the normally wild and cold weather that has been the norm for the past several million years—a period we properly call the ice age and one to which we might soon and suddenly return. It would be prudent to prepare for this and other contingencies, good and bad. A step in this direction would be to develop a number of possible future scenarios.



Peter Corning will discuss scenario planning in business and its possible application to humanity on Earth. Long-term sustainability will require that we (1) have a sustained peace, as Ed Quevedo told on in his talk, (2) fulfill the basic needs of all humanity as Peter Corning will discuss in his second talk, and (3) bring global democracy to the planet, as will be discussed by Paul Raynault. If these can be achieved, then we could realize the potential of all humans on a flourishing Earth, a vision that Richard Trowbridge will relate in the Retreat's closing talk.

## Session 7

### Panel: Achieving Sustainability in the Long Term

---

#### 7.2

#### The Role of Business in Sustaining Human Life on Earth

---

Dwight Collins  
*President*  
Collins Family Foundation  
Dwight.Collins@verizon.net

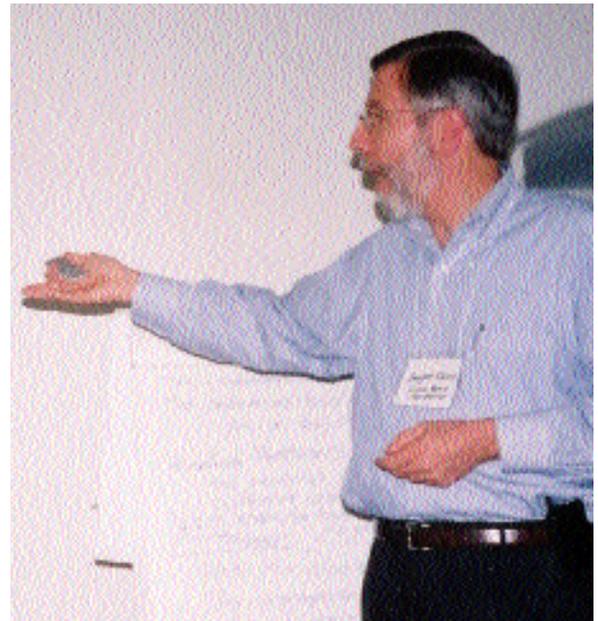
---

Today, multinational corporations regularly use powerful computer-based decision support models to optimize their strategic planning processes and expenditures of large amounts of capital. They also have a worldwide operating view and the ability to influence the direction of our culture through creation of markets and the application of new technology. Given these capabilities, the leaders of these vast institutions have an unprecedented opportunity to take leadership in moving our culture along a path toward a sustainable future.

My colleague, Dr John Ehrenfeld, Director Emeritus of MIT's Technology, Business and Environment Program and a major thought leader in the growing field of industrial ecology has stated that, regardless of its record to date relative to sustainability, business will be a dominant player in determining the future of the planet relative to sustainability. In particular, he makes these points:

- Business is focused on learning and change. It is comfortable with the ways that change can and does happen relatively quickly.
- Business is a global institution and has the power and reach to respond to challenges that are fundamentally global in nature
- Business is the source of technological innovation. Technology, in turn, is the proximate cause of environmental impact

In my effort to help corporate executives configure optimization based computer software models to aid in making strategic decisions, I participate in decision analysis regarding activities such as mergers, acquisi-



tions, internal expansion of production capacity, and product mix optimization. In broader terms, these models are used to help optimize the firm's growth trajectory in its market. Typically, optimizing equates to maximizing long-term profits. An important outcome of populating these models with data and decision rules is that the strategic decisions through which large amounts of capital are committed are chosen in the context of a relatively long term planning horizon, are more uniformly consistent, and are based more on logic and less on political considerations. They enable a higher degree of accountability within a firm. Additionally, they can be better understood and studied by students of business decision making.

These two factors, the potential for multinational corporations to act decisively in ways that have global outcomes, and the increasing consistency of their decision processes made possible in part through powerful computer modeling, point to an opportunity. We should use the insights provided by these modeling activities to help identify and flesh out how corporate decision processes can be enriched to address the dimension of sustainability. We should call on the leaders of our multinational corporations to take a position of leadership and operate from these insights to direct humanity along a path to a sustainable presence on the earth. One fruitful step that business strategists can take in this direction is to develop and promote explicit consideration of sustainability in their decision support software. These enriched models can become a vehicle for teaching executive decision makers how to better understand the broad range of linkages between sustainable operation and maximum profit in the context of their particular business environments.

## Session 7

### Panel: Achieving Sustainability in the Long Term

---

#### 7.3

#### Using Scenario-Based Strategic Planning for the Planet Earth

---

Peter A. Corning, Ph.D.  
*Director, Institute for Study of Complex Systems,*  
Palo Alto, CA USA  
PACorning@complexsystems.org

---

Many, if not most, major business firms these days routinely develop a formal strategic plan (often with the help of outside consultants), which may then be updated every few years as conditions change. Typically, these strategic plans define the organizational goals and various implementation steps for a business firm (and its various "units") during the next five to ten-years. In the past, these plans were customarily built on a more or less rigorously developed "forecast" of likely future conditions in the industry, and in the broader economy. (As a hedge, these forecasts often include a "high," "middle," and "low" projection, but all of these variants are typically derived from the same basic assumptions and tend to promote, rather than challenge, the mid-range alternative.)

This approach seemed perfectly reasonable in an era of economic and political stability, when past trends were likely to continue unimpeded for the next several years. Thus, a clothing manufacturer might use population and economic growth projections as a basis for forecasting future growth in the company's sales. Or an airport might use local demographic trends and overall growth in the air travel industry to estimate the need for expanded terminal facilities, or a new runway. Sometimes the forecasting approach still works reasonably well, but more often these days a strategic plan may be blind-sided by a growing array of unforeseeable (or at least unforeseen) events, from new technologies to the rise of overseas competitors, unstable oil prices, unexpected demographic shifts and, not least, terrorist attacks. This is why the relatively new technique of "scenario-based planning" has become increasingly popular.



Among other things, scenario-based planning puts a "structure" around the inherent uncertainties in the current environment. It compels systematic thinking about various possible futures. It helps in identifying what may be the most important "drivers" of future conditions. It allows planners to weigh the risks and assess the possible consequences of following different paths. It can stimulate creative thinking and innovative problem-solving – "thinking outside the box." But most important, it leads to very different results from traditional strategic planning methods. Scenario-based strategic plans are deliberately designed to be able to cope with future uncertainties. They are modulated to conserve options and hedge against risks. They also go for the "sweet spot" – strategies that are robust across various future eventualities. The result is likely to be a strategic plan that is at once cautious – avoiding massive, irrevocable commitments – and surprisingly bold, inspiring new initiatives to create flexibility and adaptability under a variety of possible future conditions.

Such an approach is urgently needed for the planet Earth; we need a scenario-based strategic plan that will help us to navigate through the treacherous, uncertain waters that lie ahead.

## Session 7

### Panel: Achieving Sustainability in the Long Term

---

#### 7.4

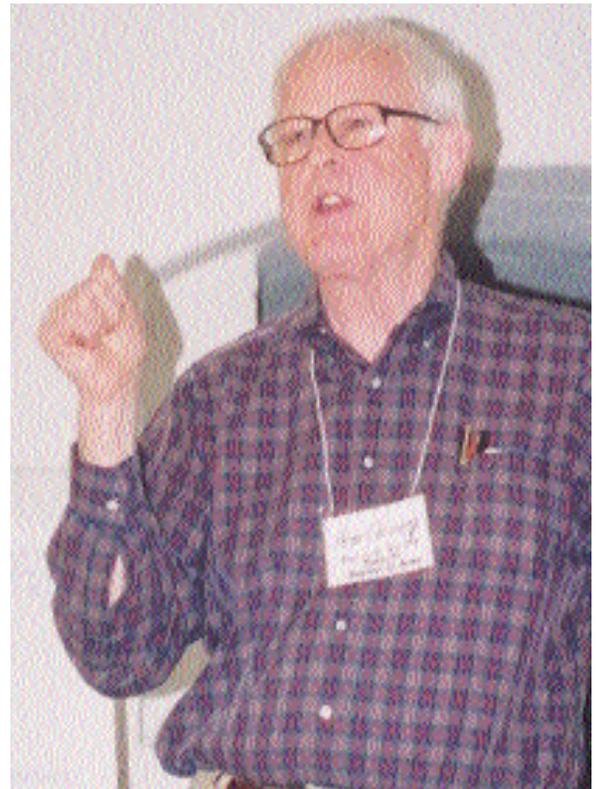
#### Biological (and Political) Basis of Sustainability: Thinking Outside the Boxes

---

Peter A. Corning, Ph.D.  
*Director, Institute for Study of Complex Systems,*  
Palo Alto, CA USA  
PACorning@complexsystems.org

---

Though we are routinely admonished these days to "think outside the box," in reality the human condition is more like a nest of Chinese boxes, or perhaps Russian dolls. Long-term economic and political viability/stability is an essential prerequisite for sustainable private enterprise and "profitability." However, we live in a highly uncertain ecological, economic and political environment, one in which major upheavals are increasingly likely. So, the prior question is, how do we achieve a sustainable economic and political order in a changing, uncertain world? In this talk, I suggest that an evolutionary/ biological paradigm provides us with an empirically-grounded normative foundation. The basic problem for all living organisms is survival and reproduction. Accordingly, a complex human society represents, quintessentially, an interdependent "collective survival enterprise." Moreover, the survival problem can be specified concretely in terms of an array of some 14 "basic needs" that represent ongoing imperatives for each one of us. (These needs have been well-validated by the so-called "Survival Indicators" research program.) If any of these 14 basic needs are not satisfied, there are likely to be serious, harmful consequences. Free markets are important mechanisms for satisfying our basic needs, but they are insufficient. Therefore, a broader normative framework is needed for addressing this fundamental survival challenge. Here (and elsewhere) I propose a new economic and political ideology that I call "fair shares" -- a normative framework that recognizes both the moral claims of free enterprise (and of "merit") and of "basic needs." Though these principles are not new, in combination



they define a new ideological middle-ground. The three "fair shares" principles are: (1) goods and services should be distributed to each according to his or her basic needs; (2) "surpluses" beyond the provision for our basic needs should be distributed according to merit; and (3) in return, each of us has an obligation to contribute to the "collective survival enterprise" in accordance with his or her ability. Some of the many issues that are raised, and questions begged, by this formulation are also addressed elsewhere.

**Session 7**  
**Panel: Achieving Sustainability  
in the Long Term**

---

**7.5**  
**The World Assembly**

---

Paul Raynault  
*President, The Raynault Foundation*  
paul@casualpc.com

---

It is now technically possible to hold worldwide elections for a non-governmental World Assembly that would represent people in the same manner as the United Nations represents governments. Even in the most remote areas people can choose a local representative that would have access to telephone, cell phone, or two-way radio. A representative World Assembly would give people around the globe a direct method with which to express their views and hear the views of others. A World Assembly would immediately gain social and moral authority without requiring governments to give up any power or even to formally acknowledge the Assembly's existence.

Most other attempts to form worldwide organizations do so to advance specific causes such as world peace, human rights, or environmental preservation. The World Assembly aims only to provide a neutral democratic forum where all can engage in dialog on whatever issues the people themselves wish to discuss. Those in favor of war will be as welcome as those opposed to war. Those in favor of rapid economic growth will be as welcome as those who to place their emphasis on preserving the environment.

Many other proposed world democratic organizations either depend on convincing various governmental entities or on raising large amounts of money. The World Assembly not only doesn't require governmental participation, it rejects it in principle. Furthermore, the World Assembly can start immediately to meet its objectives on a small scale and grow on a systematic basis. Telephones, computers and the Internet make this practical. The costs are so low that the World Assembly can be funded privately.



The first world wide election will be as historic as the invention of democracy itself. This will be the first event that can involve common people throughout the world, not just governments or activists, in a deliberate act. It will provide a whole new dynamic, raising people's sights and expectations. Each person will have a way to speak out on pressing issues and to hear what others are concerned about. For people in many countries, this will be the first experience with a true democratic process. Just the existence of an elected World Assembly will provide concrete confirmation of the rise of democracy.

A World Assembly Retreat is being held on September 20-21, 2003 in Toronto to describe the World Assembly and to plan for the first trial-run "pilot" World Assembly, which will also be held in Toronto a year later, in September of 2004.

## Session 7

### Panel: Achieving Sustainability in the Long Term

---

#### 7.6

##### A Flourishing Earth

---

Richard Trowbridge  
*Director*  
Center for a Flourishing Earth

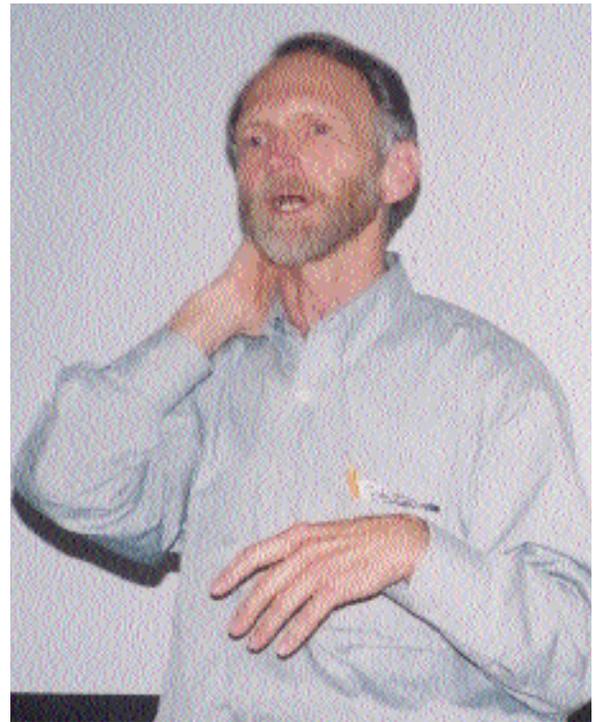
---

In the past century, living circumstances have been revolutionized for humans. The standard of living has increased greatly, as has the average lifespan. Human rights movements have helped bring about a new level of respect for all people, and we have become more aware of our dependence on nature. The world is far more tightly knit into a single global community. The challenge of creating a just, sustainable world is not primarily technological, but a question of exercising the will to apply our technical ability for the benefit of all people and of all life. To overcome the inertia of our current behavior and policies, and make the changes necessary, a powerful vision of the world we want to bring about is essential.

Flourishing may be a concept that can coordinate and direct the application of human abilities in a way that is most beneficial for all. It is a dynamic, non-anthropocentric metaphor that is suitable for all kinds of people in our pluralistic age. Flourishing is consonant with the demands of science and of the spirit. The appeal of flourishing is motivating at a deeply emotional, spiritual, and humanistic level.

The goal is a flourishing Earth: creating a world in which all people are able to flourish in a flourishing natural environment. Human abilities and knowledge gained in very recent years has made this goal possible for the first time in human existence.

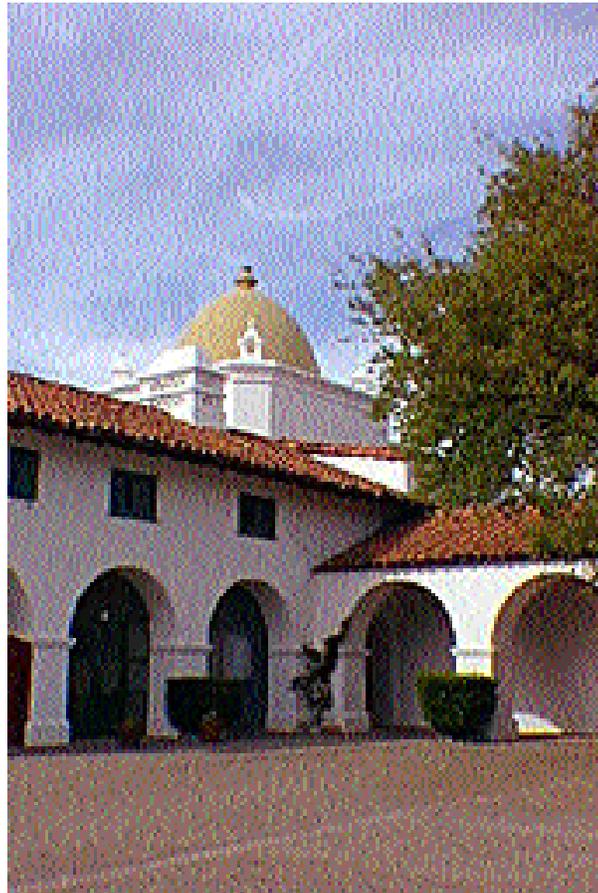
In defining flourishing, a central understanding is that all organisms and objects are beings-in-context. There is no separate individual. Autonomous individuality for humans is a constitutive ability and thus essential for



our flourishing. Only the individual can define what it is for her to flourish; yet the flourishing of the individual takes place in a physical-cultural context. This of course involves us in insoluble ambiguities and dilemmas, calling for the development of the ability to make wise choices.

To bring about a flourishing Earth, we need many people who are committed to bring it about. It is a project that is "the moral equivalent of war."

Questions about details of this retreat  
or the **Collins Family Foundation**  
should be emailed to Dwight Collins at  
[Dwight.Collins@verizon.net](mailto:Dwight.Collins@verizon.net)



**The Hacienda  
Restaurant & Guest Lodge**

PO Box 712  
Jolon, CA 93928

**Guest Lodge Reservations**  
831-386-2900

Fax:  
831-386-2262

Email:  
[rdminca@jps.net](mailto:rdminca@jps.net)