



Biotechnology, the Media, and Public Policy

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THE AGRICULTURAL BIOTECHNOLOGY PROTEST INDUSTRY

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Agricultural biotechnology has provoked a media and marketing debate of a pitch and vigor rarely seen, even by the standards of controversies over other technological innovations. The intensity and confrontational tone of the debate can be traced to a new kind of professional activist, one who combines money and marketing with the growing influence of the Internet to influence public opinion and public acceptance. Often portrayed as a grassroots, shoestring movement, the groups that oppose biotechnology are more accurately part of a much larger coalition of social activists, environmental non-profits, and social-investment organizations backed by a reservoir of funding from special interest foundations.

Biotechnology is only the latest high profile issues targeted by activist groups. This protest coalition is exploiting current concerns over globalization and leveraging complex issues like biotechnology for purposes that are not openly disclosed or easily recognized by the public. There are three key forces behind this movement: (1) **Money**, mostly from “progressive” foundations; (2) **Marketing**, drawing on the combined resources of the anti-science wing of the environmentalist movement, the organic and natural products industry, and the “socially responsible” investment community; and (3) the **Internet**, which ties the coalition together and provides a way to reach donors, spread campaign messages, market to consumers, and most key, to influence the media which shapes public perceptions.

Money

Biotechnology—genetic engineering or genetic modification (GM) in activist parlance—has become one of the protest industry’s top causes and an effective spur for fundraising. The anti-biotech industry is not as popular myth would have it funded by small contributions from many individuals. We undertook a review of publicly available U.S. IRS form 990 tax returns, corporate, foundation and non-profit annual reports, and research reports from watchdog groups like the Center on Consumer Freedom. Since 1994, more than \$750 million in philanthropic support has been directed to anti-biotechnology groups such as Greenpeace, Friends of the Earth, Institute for Agriculture Trade Policy, the Organic Consumers Association, and hundreds of other activist organizations targeting agricultural biotechnology. (Amounts listed correspond only to amounts given to leading protest groups and initiatives and do not reflect all monies donated to anti-biotechnology campaigns.)

| Foundation Name | Sample amounts funded to anti-biotechnology activist groups |
|---|---|
| Andrew Mellon Foundation | \$2,380,000 |
| Arca Foundation | \$735,000 |
| Ben & Jerry’s Foundation | \$207,500 |
| Body Shop Foundation | \$40,000 |
| Carnegie Corporation of NY | \$3,512,000 |
| Charles S. Mott Foundation | \$10,173,040 |
| David & Lucile Packard Foundation | \$8,579,397 |
| Doris Duke Charitable Foundation | \$635,500 |
| Edward J. Noble Foundation | \$775,000 |
| Flora Family Foundation | \$200,881 |
| Florence & John Schumann Foundation | \$6,782,500 |
| Ford Foundation | \$39,978,020 |
| Foundation for Deep Ecology | \$4,158,800 |
| Gaia Fund | \$278,300 |
| Gap Foundation | \$643,000 |
| Geraldine R. Dodge Foundation | \$2,636,000 |
| Henry Luce Foundation | \$670,000 |
| HKH Foundation | \$670,000 |
| Irene Diamond Fund | \$375,000 |
| Jennifer Altman Foundation | \$795,000 |
| John D. & Catherine T. MacArthur Foundation | \$11,906,500 |
| John Merck Fund | \$4,673,800 |
| Joyce Foundation | \$14,583,00 |
| McKnight Foundation | \$2,795,800 |
| Overbrook Foundation | \$1,689,500 |
| Patagonia Fund & Patagonia, Inc. | \$106,500 |
| Pew Charitable Trusts | \$130,996,900 |
| Ploughshares Fund | \$1,257,800 |
| Richard & Rhoda Goldman Fund | \$7,485,000 |
| Richard K. Mellon Foundation | \$4,630,000 |
| Robert Wood Johnson Foundation | \$574,700 |
| Rockefeller Brothers Fund | \$7,321,000 |

| | |
|-------------------------------|-------------|
| Rockefeller Family Fund | \$655,000 |
| Rockefeller Foundation | \$3,375,000 |
| Solidago Foundation | \$456,000 |
| Tides Foundation & Center | \$1,500,000 |
| Turner Foundation | \$8,282,000 |
| W.K. Kellogg Foundation | \$2,815,000 |
| Wallace A. Gerbode Foundation | \$1,106,000 |
| Wallace Genetic Fund | \$1,905,000 |
| Wallace Global Fund | \$1,596,000 |
| | |

More than forty major U.S.-based organizations participate in significant anti-biotechnology events, publicly lobby against biotechnology, oversee Web sites dedicated to anti-biotechnology campaigns, and/or play leadership roles in funding the anti-biotechnology movement. The financial expenditures of the top activist groups targeting biotechnology (of which spending on biotechnology protests represents an undetermined fraction) top \$600 million annually.

| Activist group name | 2002 Annual Expenditure |
|---|-------------------------|
| American Humane Association | \$10,366,805 |
| CAL PIRG | \$466,866 |
| Center for a New American Dream | \$1,595,554 |
| Center for Food Safety | \$705,402 |
| Consumers Union U.S. | \$162,992,456 |
| Council for Responsible Genetics | \$345,710 |
| Earth Island Institute | \$5,271,042 |
| Environmental Defense | \$41,339,781 |
| Environmental Media Services | \$2,148,056 |
| Environmental Working Group | \$2,302,243 |
| Farm Sanctuary | \$2,783,945 |
| Foundation on Economic Trends | \$438,815 |
| Friends of the Earth U.S. | \$4,644,563 |
| Global Resource Action Center | \$2,837,193 |
| Greenpeace International | \$112,332,000 |
| Greenpeace USA | \$9,809,744 |
| Humane Society of the United States | \$67,272,795 |
| INFACT | \$1,084,735 |
| Institute for Agriculture Trade Policy | \$3,806,614 |
| Institute for Food & Development Policy | \$1,297,388 |
| Institute for Social Ecology | \$297,018 |
| Int'l Center for Technology Assessment | \$566,190 |
| Interfaith Center on Corporate Responsibility | \$1,333,636 |
| MA PIRG | \$582,089 |
| Mothers for Natural Law (2001) | \$110,000 |
| National Family Farm Coalition (1999) | \$152,701 |
| Natural Resources Defense Council | \$43,370,521 |
| NY PIRG | \$4,802,746 |
| Oldways Preservation (Chefs Collaborative) | \$883,539 |
| Organic Consumers Association | \$1,249,727 |
| Pesticide Action Network North America | \$1,675,820 |
| Public Citizen Foundation | \$8,482,766 |
| Public Citizen, Inc | \$4,478,746 |

| | |
|--|----------------------|
| Rainforest Action Network | \$2,132,810 |
| Sierra Club Foundation | \$42,656,970 |
| Social & Environmental Entrepreneurs | \$3,539,608 |
| Tides Center | \$62,540,112 |
| Turning Point Project (2000) | \$634,664 |
| Union of Concerned Scientists (2003) | \$8,753,320 |
| US Public Interest Research Group | \$4,497,633 |
| Water Keepers Alliance (2003) | \$1,251,263 |
| Annual expenditures of leading anti-biotechnology activist groups | \$627,833,586 |

What do these groups have in common other than a shared, unflagging opposition to biotechnology? Almost all of them support (and in turn receive support from) the organic/natural products and corporate social responsibility/socially responsible investment (SRI) industries. These and hundreds of other foundations, corporate donors and a small group of wealthy individual donors heavily finance anti-biotechnology activists and their campaigns during the past ten years. Who gets the money distributed by the foundations listed above?

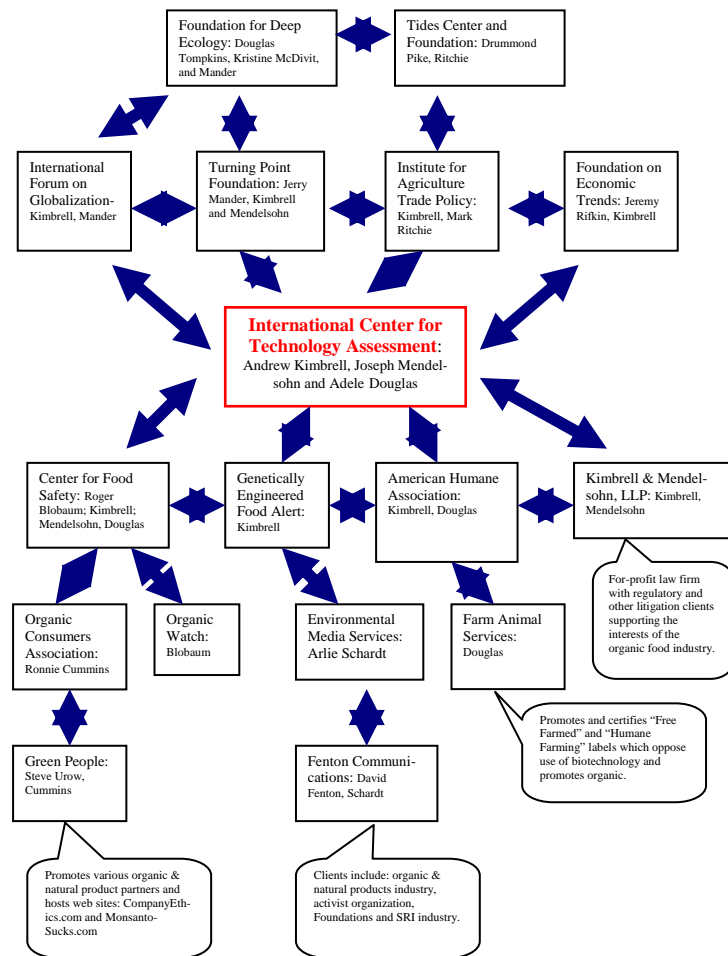
Many of these organizations and their donors may appear to be acting independently, and individually their budgets may not seem excessive. They are generally not scrutinized by the media, which portray them as diverse and independent grassroots organizations. However, an examination of the financial connections uncovers a linked network. The top anti-biotechnology activists (anti-corporate, anti-free trade, anti-globalization, etc.) have ties to a relatively small number of people directing a large number of organizations with control over a significant amount of resources.

Consider the web of influence that emanates from the *Center for Food Safety* (CFS) in Washington, DC. CFS, run by Andy Kimbrell, Joseph Mendelsohn, and Adele Douglas, often coordinates anti-biotechnology campaigns and litigation. Douglas and Kimbrell also run the International Center for Technology Assessment, which is located in the same Washington, D.C. office as CFS. Kimbrell and Mendelsohn also run the Turning Point Foundation (same location) with Jerry Mander (Foundation for Deep Ecology, International Forum on Globalization (A project of the Tides Center), Environmental Grantmakers Association and Public Interest Communication advertising agency founder). Douglas and Kimbrell also share ties to the American Humane Association and Humane Society of the United States. Kimbrell is also a director of International Forum on Globalization (Jerry Mander again) and is listed as a board member of the Institute for Agriculture Trade Policy (IATP), run by Mark Ritchie, and the Foundation on Economic Trends (FOET) run by Jeremy Rifkin. The combined 2001 annual budgets for the groups that Mr. Kimbrell helps direct is nearly \$18.2 million. The resources controlled by his associates exceed \$100 million.

CFS has spawned other groups, including the Organic Consumers Association (OCA) run by former CFS staffer Ronnie Cummins, and Organic Watch, run by the American Humane Association director and organic industry lobbyist Roger Blobaum. Records show that OCA was an internal CFS campaign until 1998, when it was spun off. While still part of CFS, OCA's noted financial sponsors included Eden Organic and Patagonia Clothing.

The for-profit law firm of Kimbrell & Mendelsohn is listed on public IRS tax forms as a financially linked partner to their ICTA and CFS anti-biotechnology campaign organizations. CFS's advisory board also includes representatives from Rodale's Organic Gardening, The Organic Certifiers, and the leading organic industry registered lobbyists in Washington, D.C.

Numerous CFS Web site domain names are registered to West-Coast OCA coordinator Steve Urow. Urow, along with OCA director Ronnie Cummins, is also listed as the registrant and a principle of GreenPeople.org, a supplier of organic and "socially responsible" products (a project of Social and Environmental Entrepreneurs—SEE). GreenPeople's other Web campaigns include MonsantoSucks.com and the SRI site CompanyEthics.com. CFS is also listed as a founding member of the "Genetically Engineered Food Alert" campaign launched by Fenton Communications (which also runs Environmental Media Services), the most prominent activist public relations agency, based in Washington, D.C. Fenton's client list includes numerous other anti-biotechnology activists such as Greenpeace, several organic and natural product companies, socially responsible investment funds, and the grant-making foundations that fund the efforts.



Key organizational and funding links among key activist group leaders

As the CFS example demonstrates, one group and a handful of individuals are tied to dozens of other so-called independent organizations, often promoted as representative of diverse opposition to biotechnology. These individuals control tens of millions of dollars (in some cases hundreds of millions) in advocacy resources and coordinate the activities of dozens of front organizations. The vast majority of formally incorporated anti biotechnology groups share common board members, staffers and/or funding sources. A larger number of informal anti-biotechnology organizations are formed and dissolved every year by these same people, allowing the groups to avoid prolonged public scrutiny and having to publicly file tax and other financial records.

In addition to employing activists, traveling the globe to attend protests, and building networks of Web sites, this loosely interlocked network spend millions of dollars on well-paid lobbyists, professional public relations firms (like Fenton) and a range of outreach activities including multi-million-dollar advertising campaigns, telemarketing, and sophisticated training programs on issues ranging from creative confrontation with police to Internet propaganda. News reports suggesting that opposition to biotechnology is the result of a grassroots consumer movement and claims that activists are protesting on a dollar-a-day ring ever more hollow.

Andy Kimbrell's network and influence at CFS is not unique. His associates and business partners have similar interconnected and often undisclosed potential conflicts of interest with the various campaigns they help direct. Combined, these tax-exempt groups and individuals represent a multi-billion-dollar protest industry promulgating a vast array of for-profit side businesses and all of which have direct links and financial ties to the organic and natural products industry.

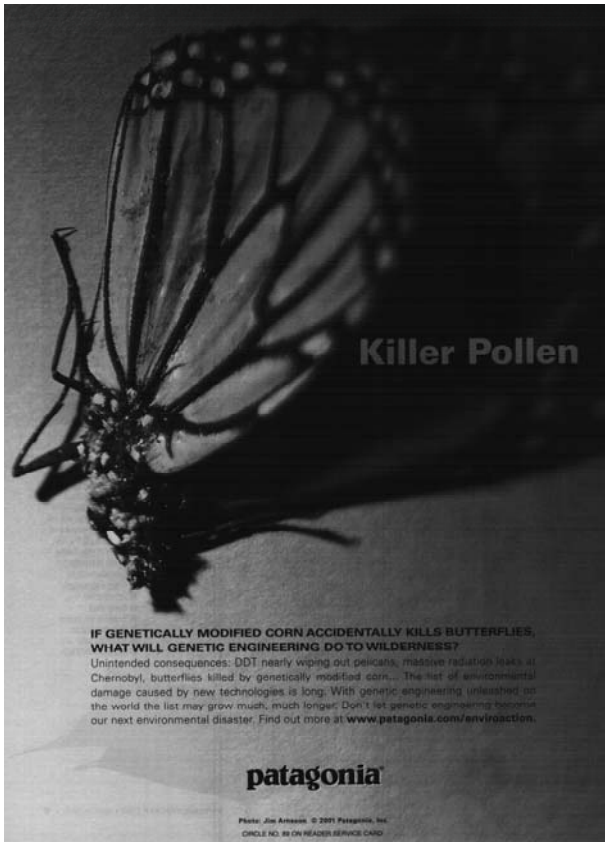
Marketing

The organic and natural products and the corporate social responsibility/socially responsible investment (CSR/SRI) movements use anti-biotechnology rhetoric and support for activist groups to validate their products and grow their markets. The combination of advertising, public-relations campaigns, lobbying, and financial support for synergistic protest groups, has created an extremely negative environment for agricultural biotechnology that was unanticipated by its supporters.

For the *organic and natural products industry*, there is the combined motivation of protecting existing markets from competing, less-expensive biotechnology-produced (often competing with organic as "pesticide-free") foods with the opportunity to increase organics' existing market share (Forrer, et al). Consider the "cause marketing" campaign launched by Patagonia Clothing, which runs an advertising campaign emphasizing its "social responsibility" and use of organic cotton while the Patagonia Foundation funds anti-biotechnology efforts. The founder of Patagonia Clothing, Kristine McDivitt also heads the non-profit Foundation for Deep Ecology which funds groups like the Turning Point Foundation that conveniently target Patagonia's GM-using competitors.

Key analysts have pointed out the synergy that exists between anti-biotechnology activists and ‘natural’ product companies. Thomas Hoban of North Carolina State University calls it “a key marketing strategy for the organic industry.” According to David Martosko, director of research Center for Consumer Freedom, “Support for food scaremongers comes from organic and natural food marketers, eager to hurt their conventional competitors and build market share (Hoban).” That’s not to say, of course, that McDivitt and other activist/business people do not hold genuine, strong opinions in opposition to biotechnology. However, this synergy does highlight the conflict of interests that permeate the “social responsibility” community and the organics industry.

The two largest retailers of natural and organic foods, Wild Oats Markets and Whole Food Markets (which promotes itself on its home Web page as believing in “a virtuous circle entwining the food chain, human beings and Mother Earth...through a beautiful and delicate symbiosis”) closely align with anti-biotechnology activists, often sponsoring protest events such as the annual Biodevastation conferences and initiatives like The Campaign to Label Genetically Modified Foods.



Patagonia Clothing advertisement:

Killer Pollen

IF GENETICALLY MODIFIED CORN ACCIDENTALLY KILLS BUTTERFLIES WHAT WILL GENETIC ENGINEERING DO TO WILDERNESS?

Unintended consequences: DDT nearly wiping out pelicans, massive radiation leaks at Chernobyl, butterflies killed by genetically modified corn. The list of environmental damage caused by new technologies is long. With genetic engineering unleashed on the world the list may grow much, much longer. Don't let genetic engineering become our next environmental disaster. Find out more at www.patagonia.com/enviro

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www.backpacker.com

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The organic community is well aware of the financial benefits that come with discrediting less expensive conventional and biotech products. At the 1999 Organic Food Conference, growers and retailers were warned by a leading industry marketing expert: “If the threats posed by cheaper conventionally-produced products are removed, then the potential to develop organic foods will be limited.” That same year, the organizer of the annual Summit on Organic Food Technology told participants, “Right now, Europe is freaking out about genetically altered produce. That’s an opening for U.S. organic growers (Forrer).” In an analysis entitled, “Why organic has the power to alter all food marketing,” the journal *Marketing* noted, “Years of black propaganda from the organic fringe, backed by the mad cow tragedy, have had a perceptible effect on consumer views (*Marketing*).”

Organic Industry supported trade groups such as The Institute for Agriculture and Trade Policy (IATP) receive funding and support from a wide range of organic groups, outwardly mainstream philanthropic interests, and corporations. IATP’s Mark Ritchie and IATP’s leadership also consult and provide counsel to such leading biotechnology commercial interests as Dupont. Yet, in practice, IATP has morphed into a leading anti-biotechnology advocacy group. Like many anti-biotech activists, IATP publicly professes a desire to work with corporations to make them better global citizen, but its behind-the-scenes actions suggest a confrontational ideology. For example, in May 2003, the group simultaneously helped organize and joined protests seeking to disrupt the World Agricultural Forum in St. Louis, while at the same time sitting on the Forum’s NGO advisory board, ostensibly to help make the conference successful. IATP’s leadership has its hands in dozens of other protest campaigns, and has even shared resources with extremist groups like Earth First! which takes credit on its Web site for “serious sabotage and damage” against government offices, destruction and theft of equipment, records and other property, and “stock destroyed” in nighttime raids on agricultural facilities.¹

In addition to its numerous organic lobbying campaigns, IATP also owns an organic coffee trading company, Headwaters International. A.k.a. “Peace Coffee,” Headwaters receives tens of thousands of dollars in payments from the non-profit Tides Center, which also funds the IATP-supported Organic Consumers campaign targeting Starbucks to buy more coffee that is organic from suppliers like Headwaters (Forrer). (IATP’s president Mark Ritchie is also noted as the registered agent on Tides’ incorporation filing documents).

The *CSR and SRI communities* are replete with similar conflicts of interest, including ties to organic activists. As Mark Ritchie noted in an IATP circulated e-mail in April, 2000, “Financial institutions provide campaigners with a key strategic lever—if successful, financial campaigns have the power to withdraw necessary funding from the companies, cutting off the unwanted technology at the source.”

¹ Agbioworld.org reports that in 2001 IATP’s Sustain and “Project GEAN” (Genetic Engineering Action Network) campaigns shared the same Chicago mailing address as Earth First!.

Many for-profit companies that promote themselves as “socially responsible” and position themselves as icons of the SRI industry have launched cause-marketing promotions targeting biotechnology. The Body Shop, Ben & Jerry’s, Tom’s of Maine, Stonyfield Farms, Whole Foods Markets, and Working Assets, a credit card and telecommunications company that touts itself as “created to build a world that is more just, humane and environmentally responsible” are aggressive donors and advertisers. These companies often fund and coordinate with radical activists in direct-action campaigns that have included personal assaults and criminal destruction of property. Whether intended, their effect is to spread unfounded public fears to undermine the safety and/or social reputation of competing products.

CSR and SRI groups have focused increasing and overwhelmingly negative attention on the biotechnology issue, often linking with aggressive anti-biotechnology activists. Some organizations, such as As You Sow, are specifically dedicated to this issue. Others such as Corporate Watch, the Interfaith Center on Corporate Responsibility (ICCR)², and the Coalition for Environmentally Responsible Economies, Business for Social Responsibility (CERES), Co-Op American, and CSRwire³ have all adopted anti-biotechnology positions.

Domini Social Investments and Calvert Financial Group, the two dominant players among social investment funds, aggressively screen out biotech stocks and often file anti-biotechnology shareholder resolutions. Another larger SRI fund, Citizens Funds, which has a sizable holding in Whole Foods Market, has committed to two shareholder resolutions asking large food processing companies to halt the development, use and sale of GMOs pending further investigation. Green Century Funds, which invests in Horizon Organic and United Natural Foods, is currently campaigning against Campbell’s Soup Company use of genetically modified ingredients in its food products.

Fenton Communications, the public relations firm behind the infamous 1989 Alar, is the PR firm of choice for many in the social activist community. Fenton and its subsidiary, Environmental Media Services, simultaneously represent the organic and natural products industry, the socially responsible investment industry, and a range of synergistic activist groups. Founder and president David Fenton is also a founding member of Business for Social Responsibility (BSR), the San Francisco-based CSR group, which bridges the activist and mainstream communities. It now has more than 1,400 members, including blue-

² ICCR proposes resolutions primarily targeting two industries: (1) Life science companies to stop commercializing genetically engineered foods (GEF) until long-term safety is assured; and (2) Food companies, restaurants, and supermarkets to remove genetically engineered (GE) ingredients from foods sold under house brand or private labels, until long-term safety testing is assured, with the interim step of labeling products that contain those ingredients.

³ CSR Wire is a project of SRI World Group, which also runs the Shareholder Action Network (a project of the Social Investment Forum, the SRI industry trade group), which has run campaigns directed at Monsanto for its development of agricultural biotechnology products. SAN has also sponsored or supported dozens of anti-biotech shareholder resolutions in recent years, many of which target major corporations such as Monsanto, Sara Lee, and Kraft.

chip corporations, as well as a range of non-profits and other groups. Fenton and BSR have historical and current links to the Shareholder Action Network, the Social Investment Forum, and Co-op America. While BSR does not have a stated position on agricultural biotechnology, it has repeatedly included pro-organic and anti-biotechnology items in its weekly electronic newsletter.

The Internet

It's not coincidental that the rise of the Internet as an influential communications medium coincided with the proliferation and decibel level of activist groups. The Web is the fulcrum for these various activist groups. Its dramatic growth has enabled activists from around the world to bridge geographic distances, coordinate activities, and link up with new affinity groups, thereby heavily influencing the way this debate is framed in the media and by governments. From shareholder resolutions to lobbying for regulatory changes, both the organic and CSR/SRI industries are aggressive, and actively network and support one another online. CSR/SRI sites frequently use automated Web tools to generate viral marketing campaigns attacking biotechnology companies and provide a plethora of links to anti-biotechnology activist group web pages for investors interested in researching the topic. Organic trade association and industry sites provide similar "Net Activism" services and links. Unlike their corporate targets, biotechnology opponents view and use the Internet with a broader perspective and potential.

The first indication of the nexus of the organic community and anti-biotech forces appeared in 1998, when the U.S. Department of Agriculture sought public comments on proposed regulations governing the use of the term "organic" for growing and marketing food. More than 275,000 comments were received, the most ever on any one topic. As a result, the Secretary of Agriculture announced that due to the large number of comments, genetically engineered crops would be banned from organic agriculture. The majority of these comments were electronic form letters generated over the Internet thanks to letter-generating tools on a variety of Web sites, viral e-mail initiatives, and aggressive promotions within a wide-range of online discussion platforms.

News reports suggested that broad and diverse public opposition to genetically engineered crops forced the policy change. However, a review of the USDA Web site reports revealed a different story: More than 100,000 of the form comments submitted to USDA were linked to the clients of just one public relations firm, Fenton Communications (Forrer). Top sources of form letters to USDA and their public relations firm affiliation:

| Source | PR firm affiliation | Number of form letters |
|--|---|------------------------|
| Working Assets | Fenton Communications | 35,989 |
| Sustain USA Organic Trade Association | Environmental Media Services (EMS) partner | 20,656 |
| Rodale's Publishing | Fenton Communications | 17,338 |
| Organic Farmers Marketing Association | EMS partner | 11,667 |
| Save Organic Standards Center for Food Safety | EMS partner | 11,349 |
| Mothers for Natural Law | EMS partner | 4,594 |

| | | |
|---|-----------------------|-------|
| PureFood Campaign Center for Food Safety | EMS partner | 2,885 |
| Center for Science in the Public Interest | Fenton Communications | 1,977 |
| EMS and Fenton share staff, office space and other resources. EMS partners participate in Fenton-supported press conferences and other public-relations activities. EMS is noted as a non-profit project of the Tides Center, which provides tax-deductible “donor directed” funds to EMS from such entities as Working Assets and other donor groups (many of whom are also Fenton clients). Working Assets founder Drummond Pike runs Tides. Tides’ 1998 IRS form 990 tax return notes Fenton Communications as the second-largest recipient of these tax-deductible funds in payment for services. | | |

Anti-biotechnology activists and their organic industry marketing allies view the Internet as a way to influence the language used in discussing biotechnology, which subtly influences public perceptions. A well-circulated 1999 email memo directed to “activists” and “journalists” including Greenpeace, IATP and the Organic Consumers Association—“GE Euphemisms and More-Accurate Alternative Power Words to Use: Controlling the Language”—outlined what has become a successful strategy to demonize biotechnology. Written by an organic- and natural-product advertising executive, the memo urged that “we should never use” such neutral, science-based terms such as “biology,” food scientists,” “biotechnology companies,” and “biotechnology.” He provided a glossary of alternatives—highly negative phrases such as genetic pollution, Frankenfoods, terminator seeds, genetic engineering industry, genetically engineered foods, test-tube food, and mutated food, which have become popular among headline writers and even mainstream news publications.

“Make them use our words,” writes Peter Michael Ligotti, the architect of several anti-biotech Internet campaigns. “Look how successful the ‘terminator’ seed term was. At first, that was a term only used by activists. And congratulations on the success of the term ‘Frankenstein food.’ I am suggesting an extension of those two great successes,” adds Ligotti (Ligotti).

Craig Winters, lobbyist and marketing consultant for the organic and natural products industry, who runs the organic-industry-funded “The Campaign to Label GE Foods,” has noted the importance of using key anti-biotech buzzwords “genetically modified” and “genetically engineered” rather than “biotechnology”. In an e-mail to organic industry supporters and activists on ways to “fine tune our marketing approaches” entitled “Genetic Terminology, Winters wrote, “The main thing to keep in mind is that the corporations... never refer to these terms,” he said. “They always say ‘biotechnology.’ Market surveys show that consumers have a negative response to any term that includes the word “genetically (Winters).”

This disciplined Orwellian campaign has worked. A comparison of articles from the first six months of 1993—the year the first biotech crops were approved for commercial use—with those during first six months of 2002 suggests that activists have successfully defined the terms of public dialogue on biotechnology. There was a one-hundred-fold increase in the media’s use of the more inflammatory and emotional words such as “genet-

ic,” “manipulation,” and “altered” as compared to more neutral terms such as “biotechnology” or “bioengineered.”

A search term frequency review for key phrases associated with agricultural biotechnology conducted in April 2003 of the major search engines using Overture and Wordtracking services show’s negative terms outnumber neutral terms by more than ten-to-one.

| Term/Phrase | Frequency |
|---|---------------|
| Genetically modified (food, crop, plant, etc...) | 20,080 |
| Genetically engineered (food, crop, plant, etc...) | 7,508 |
| Genetically altered (food, crop, plant, etc...) | 2,827 |
| Frankenfood(s) | 461 |
| Terminator (seed, gene, plant) | 205 |
| Total searches per month using negative terminology: | 31,081 |
| Agriculture, plant, food, etc... bio-tech(nology) | 2,807 |
| Total searches per month using positive terminology | 2,807 |

Search engine results are also heavily weighted with protest groups and organic marketing campaign sites uniformly critical of agricultural biotechnology. Using the most frequently searched terms—“genetically modified”, “genetically-engineered” or “genetically-altered”—not one biotechnology corporate or industry trade association Web site comes up in the top fifty results. Even when using the more neutral biotechnology phrases, the results include a significantly higher proportion of critical destinations in the top results. The Internet consuming public is significantly more likely to be influenced by opponents of biotechnology than either supporters or neutral stakeholders.

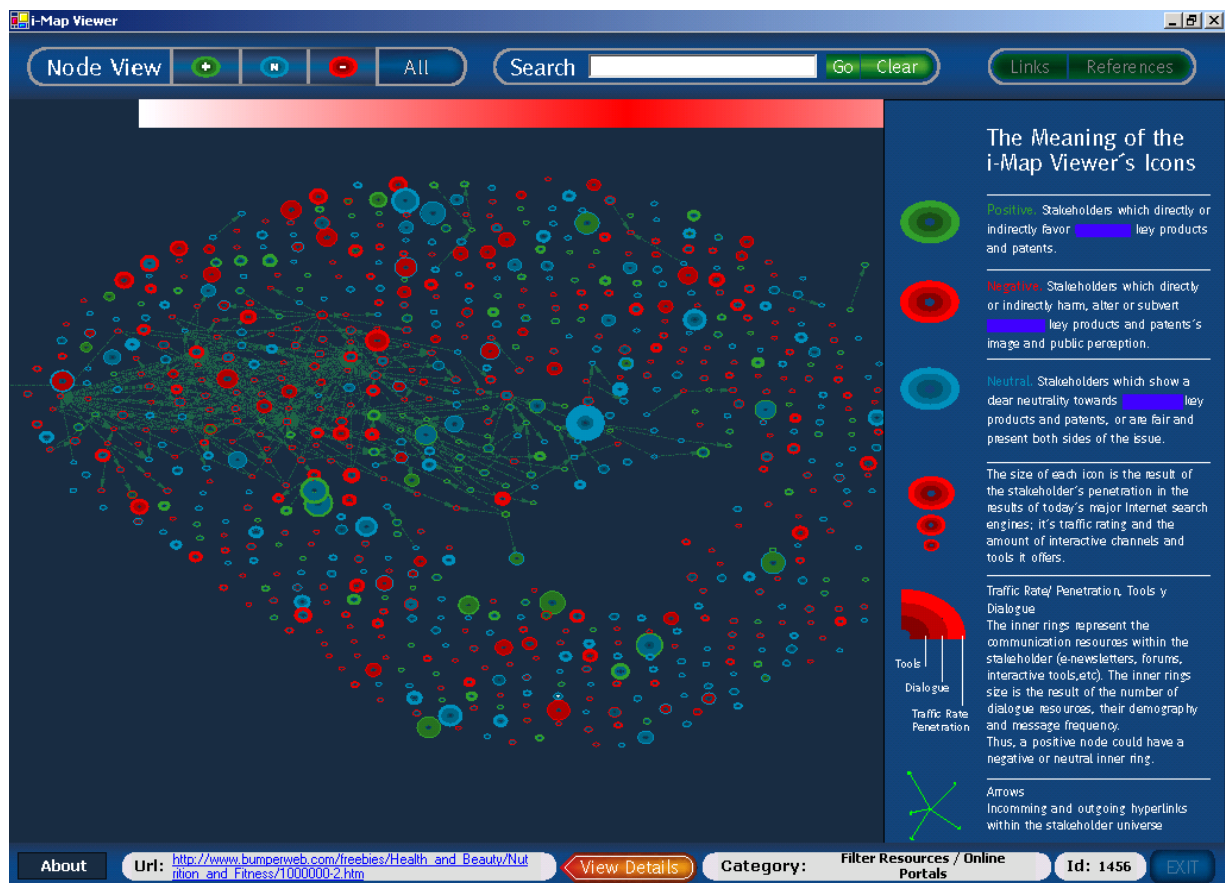
Steven Katz, an associate professor of English at North Carolina State University studies the linkage between language and public perceptions of risk. “The important role that language plays in the public’s perception and reception of scientific data and risk assessment is often neglected by scientists,” says Katz. He singles out issues that have been slowed or completely halted by public concerns driven by language—including biotechnology. He notes that such “public resistance has been traced to communication problems – flawed rhetorical choices and faulty assumptions by scientists about the role of language, emotion and values in communicating with the media and public (Katz). A study by the London School of Economics found that the media’s use of “Frankenfood” headlines and other negative metaphors for foods produced using agricultural biotechnology have helped create and fuel public fears (Reuters). Numerous published polls show a majority of consumers support foods derived from “biotechnology,” yet other polls show these same consumers oppose “genetic engineering” of food (*Farmers Guardian*).

To illustrate how activist groups, along with what amounts to their affinity marketing partners like the organic and CSR/SRI industries, leverage the Internet to their advantage, we applied a proprietary data-analysis system that combines an interactive graphical in-

terface with a comprehensive database of online resources linked to a particular issue or product. Using a series of algorithms and other weighting factors, we generated a picture of the online environment for any product, issue or demographic group.

The interactive map that follows is drawn from a benchmark survey done on a consumer food product associated with biotechnology, represents the online environment for the product and reflects an analysis of dozens of relevant data points in a review of more than 1,000 destinations (Web sites, directory spaces, portals, discussion groups, etc.) that were actively involved in influencing online public interactions regarding the product/topic area. Each destination (circle) is weighted in size by usage rankings; the color reflects its perspective towards the product/issue (green = positive; blue = neutral; and, red = negative); the lines linking the sites represent their interconnections (links pointing in); and their relative position to the center of the map is equal to their influence relative to the product/topic.

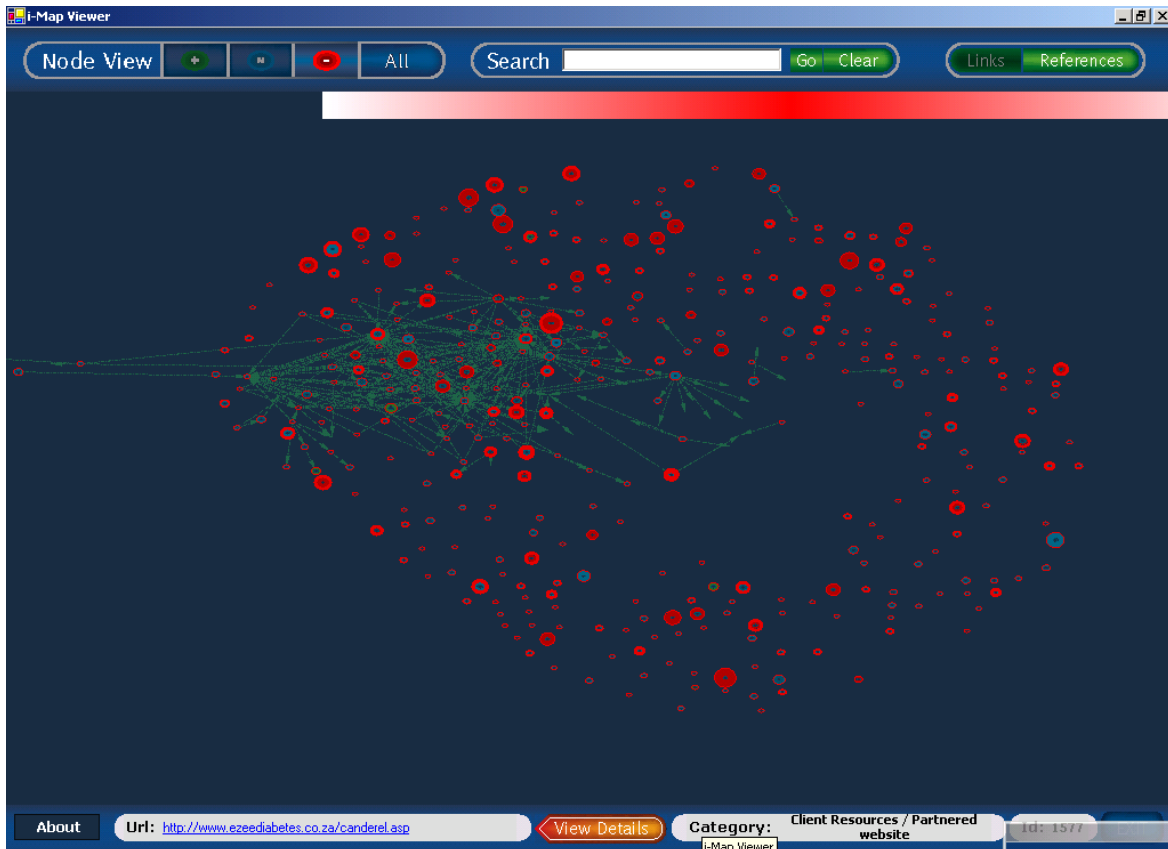
The online environment of positive, negative, and neutral online destinations oriented around a biotechnology-related food product or topic.



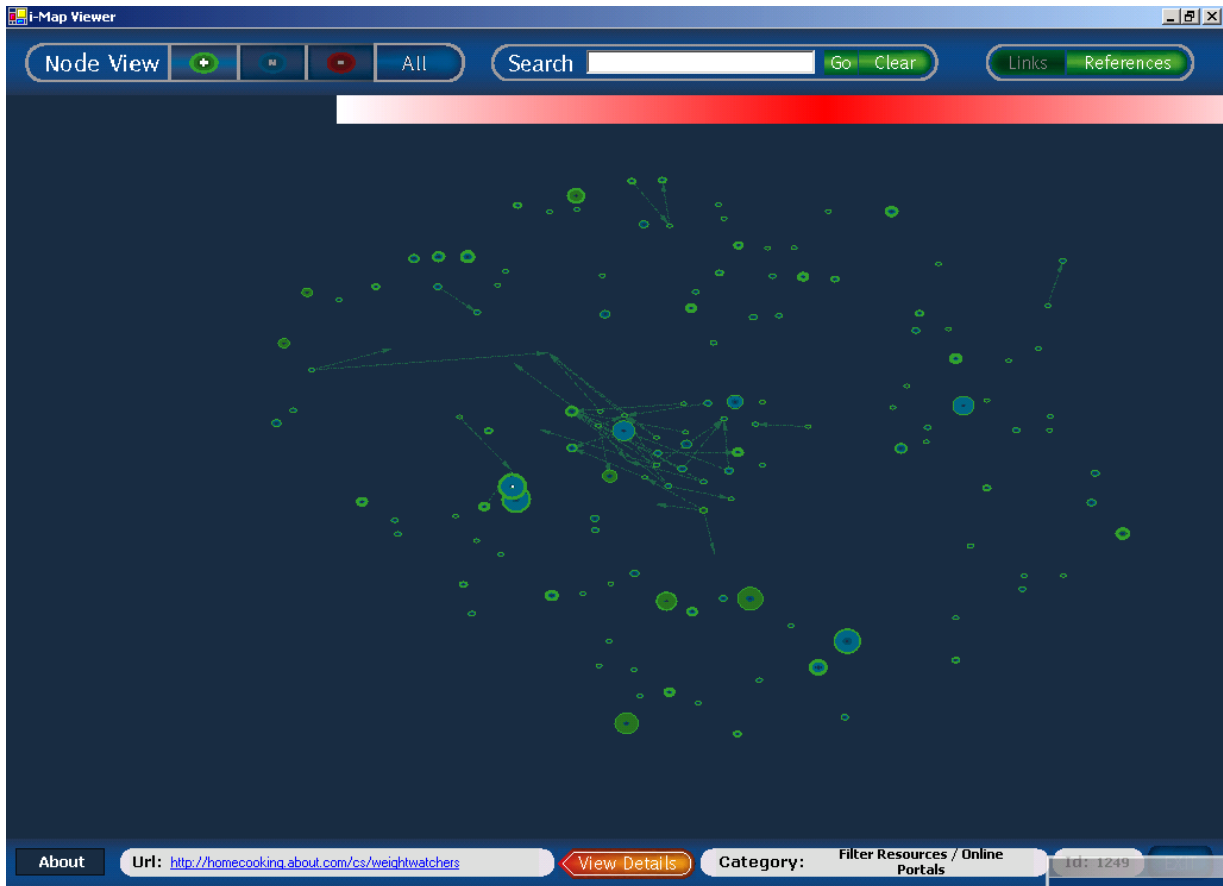
v-Fluence Interactive Benchmark Map (i-Map™)

In this case, anti-biotechnology online destinations effectively networked and organized for maximum impact online. This is shown by the negatively oriented red destinations,

which far outnumber both the blue-neutral and green-positive ones combined. More importantly, these destinations are oriented closer to the center of the map, which indicates that they are significantly more interconnected and networked. Because one or a few groups often controls or influences dozens of other Web sites, the content is replicated and linked, multiplying its effect. Further analysis reveals that this successful positioning is a result of content sharing, linkage programs, aggressive outreach in online dialogue spaces, and control of the language adopted by consumers and the media relative to the product/topic. This linkage results in more public influence online and with key opinion leaders, whom research shows rely heavily upon the Internet for information.



While content was shared broadly and quickly among affinity groups critical of biotechnology, positive and neutral destinations, which tend to be industry, trade association, academic, and government sites were poorly linked. They were relatively poorly organized to effectively influence the online environment for the product/topic. The product or issue group being targeted typically develops one response from a highly credible source that, while usually effective from a content perspective, is not sufficiently circulated, replicated, or amplified. It becomes the online equivalent of a tree falling in an empty forest, unheard.



These images illustrate how activists can dominate the online environment through simple, but extremely effective tactics. The Internet has become the primary source of information on a range of topics. At the same time, numerous surveys confirm its influence over a majority of key stakeholders including journalists, government regulators, and other opinion leaders, and note that the Internet's power now exceeds that of any other medium.⁴ Activists' dominance of the online environment enables them to exert outsized influence over the broad public dialogue associated with various protest topics, with agricultural biotechnology being a case in point.

Charting a Course for Change

Money plus marketing plus the Internet adds up to significant influence for the anti-biotechnology industry. Yet, the protest industry is still perceived by the public as a grassroots movement. These factors remain significantly under-reported by the media and largely unappreciated by the biotechnology industry. Biotechnology supporters and commercial interests need to significantly change the way they have responded to these groups.

As a critical first step, they need to learn from the activists and use the Internet effectively. Independent research and statements in support of biotechnology should be freed from

⁴ Various studies found on www.nua.ie and www.cyberatlas.com

copyright restrictions so they can be replicated in multiple destinations and linked to and from corporate, trade association, and other sites. Competitors must also work together to directly reinforce each other's successes; relying solely on trade associations to defend common industry interests is not sufficient and often results in defining the entire industry by its weakest links. Pressure needs to be applied on Better Business Bureaus, professional associations, and State and federal regulators to hold organic and natural product companies accountable when their advertising claims are blatantly misleading or false. The multi-billion-dollar organic and CSR/SRI industries should be challenged to meet the letter-of-the-law regarding their masking of marketing expenses as tax-deductible contributions.

If perception is reality then the anti-biotechnology movement has won many battles. . The war for the public hearts and minds is far from over regarding agricultural biotechnology. Perceptions can be changed. Indeed, they must be changed if the promises of biotechnology are to become reality.

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