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## Project Overview

Nanotechnology is emerging worldwide as a new tool with a range of applications in fields such as energy, medicine, cosmetics, and textiles. There is an estimated 1000 products that contain engineered nanomaterials currently on the consumer market, and the industry is expected to grow. With the commercial growth of this industry, many non-governmental organizations (NGOs) have been asking whether there is enough focus on the possible impacts of nanotechnology on environmental and human health. NGOs (for example, Greenpeace and Friends of the Earth of Australia) are self-identified representatives of the public, and as such, are positioned to influence public policy and public perceptions – and possibly public acceptance – of nanotechnology, which could have implications for the growth, dynamics, and regulation of the industry. However, there is little known about these nano-focused groups. This research asks:

Why has the emergence of nanotechnology become an issue for NGOs?

## Introduction

There are approximately 1000 manufacture identified products that contain nanotechnology on the market today (PEN 2012). With nanotechnology in its emergent state and an abundance of nano-enabled products currently on the market, questions have arisen as to whether there is enough focus on the possible impacts of nanotechnology.

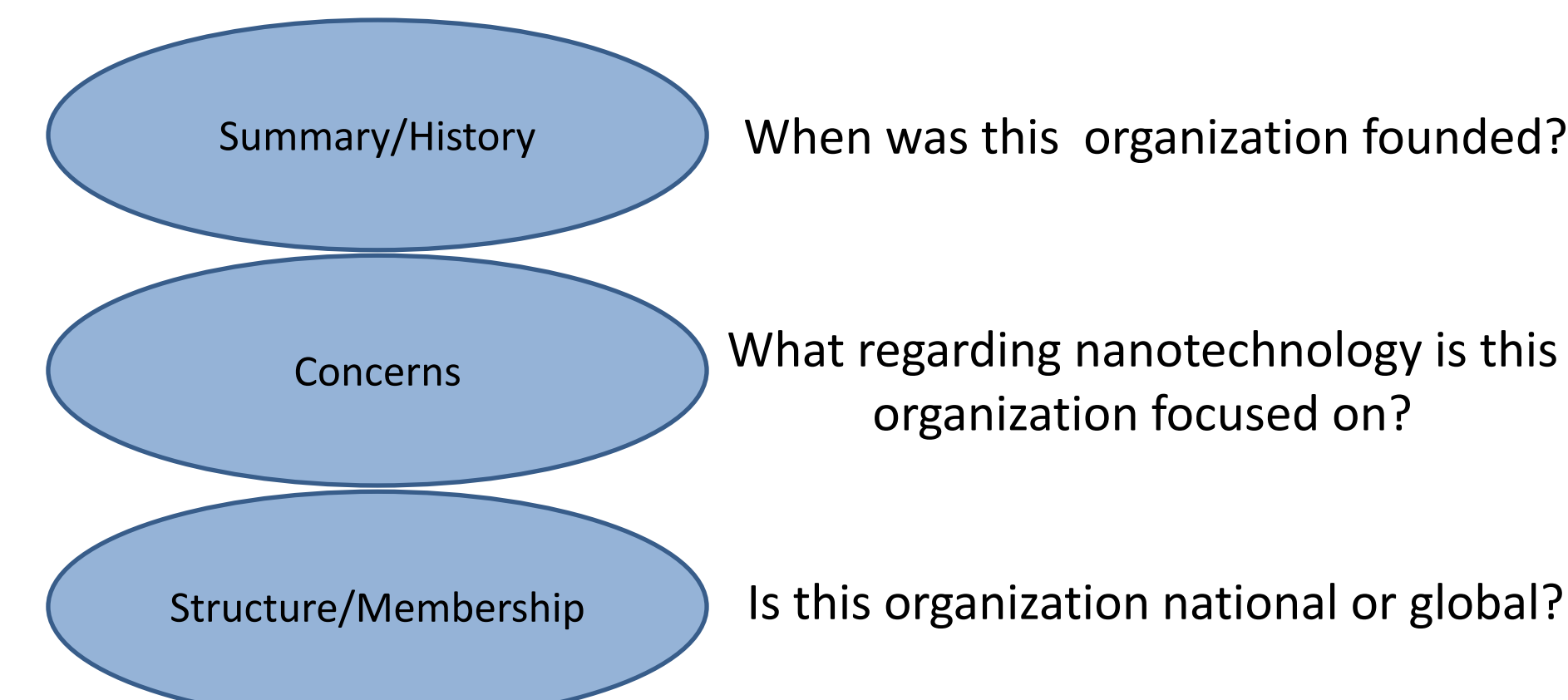
There are multiple stakeholders in this discussion, including industry, government, academia, and the public. NGOs, or public interest groups, serve as self-identified representatives of the public and have emerged to address nanotechnology related issues. According to recent research, environmental rights organizations, types of NGOs, have had an impact on the governance of nanotechnology (Hess 2010).

Our research takes a global view of NGOs, defining these groups broadly to include those that oppose or support regulation of the industry and includes a range of areas of interest, such as environmental rights, worker safety, consumer safety, or industry growth. We restrict our focus on those groups that have nanotechnology as an aspect of their agenda to better understand why nanotechnology has emerged as an issue of concern for NGOs.

## Methods

- Identify qualifying NGOs
- Build on a global matrix of 78 NGOs
- Compile published works to include: Articles, Reports, and Journals
- Create a summary sheet for each NGO to better assess its: structure, history, and its standing regarding nanotechnology

### Example: Summary report



## Results

Progress on this project has so far been focused on developing a database of NGOs worldwide that have participated in some level on issues related to nanotechnology. Preliminary research has found:

- 127 NGO's concerned about nanotechnology
- 60 of which are committing resources to nanotechnology issues (17 of them are described above)
- 67 of which are "allied organizations" or organizations that lend their name to statements but do not commit other resources.
- NGO's are primarily concerned with environmental and public health and safety issues.
- In acting on concerns, NGOs have primarily issued publications.
- Goals of NGOs range from calling for a moratorium to calling for increased environmental health and safety funding.

	Organization (Nation)	Goal	Nano Focus	Target
	Beyond Pesticides (U.S.)	Implement policy of nano in FDA	Silver Nanoparticles	EPA and FDA
	Environmental Defense (U.S.)	Partner w/Gov. & Corp. for policy	EH&S	U.S. Gov., Industry, EPA and FDA
	Project on Emerging Nanotechnology (U.S.)	Partner w/Gov. & Corp. for policy	EH&S	U.S. Government, EPA
	Silicon Valley Toxics Coalition (U.S.)	Partner w/Gov. & public for policy	waste w/ electronics & lifecycle	U.S. Government and Public
	Loka Institute (U.S.)	Influence Gov. & Industry	EH&S	Public & Government
	Physicians and Scientists for Global Responsibility (N.Z.)	Regulatory Change	EH&S	Local Government
	Canadian Environmental Law Association (Canada)	Local Policy Change	EH&S	Local Government
	Soil Association (U.K.)	Ban food products with nano	EH&S	Food Industry and Farmers
	Nanotechnology Industries Association (Global)	Maximize communities knowledge	Promotion of nano	Consumers & Government
	Center for Responsible Nanotechnology (Global)	Enact Governmental policy	EH&S	Government
	Erosion, Technology and Concentration Group (Global)	Moratorium	EH&S, nano life cycle	International Governments
	Friends of the Earth (Global)	More EH&S research	More EH&S research	Government and Industry
	Greenpeace (Global)	Moratorium	EH&S, nano life cycle	Nano Industry
	Institute for Agriculture and Trade Policy (Global)	Implement policy of nano in FDA	EH&S	FDA and U.S. Government
	International Center for Technology Assessment (Global)	Moratorium	EH&S, nano life cycle	EPA and FDA
	National Resources Defence Council (Global)	EH&S research, Reg. Change	More EH&S research	Government
	Center for International Environmental Law (Global)	Influence international regulations	EH&S	International Governments

## Conclusions & Continuing Work

Preliminary findings suggest that nano-focused NGOs aim to impact:

- Emergent regulation of the nanotechnology industry
- NGOs focused on impacts of nanotechnology on EH&S

Further research will examine how these organizations impact emergent regulation and investment in nanotechnology.

- Are specific nano materials being targeted?
- Which target is having the most impact in policy making
  - Is it federal agencies or governmental?
  - Is targeting industry having an impact?

## Literature cited

Hess DJ (2010) Environmental reform organizations and undone science in the United States: Exploring the environmental, health, and safety implications of nanotechnology. *Science as Culture* 19(2):181-214.

PEN (2012) <http://www.nanotechproject.org/inventories/consumer/>

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