

# ISO266 Biomimetic Standards

B3D Webinar  
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# Webinar Panel

Taryn Mead	Marie Curie Early Career Researcher, Business School, University of Exeter
Yael Helfman-Cohen	Co-Founder, Biomimicry Israel
Adiel Gavish	Founder, Biomimicry NYC
Cas Smith	Research Analyst, Terrapin Bright Green
Fil Salustri	Professor of Mechanical Engineering, Ryerson University
Jacques Chirazi	Program Manager, Clean Tech, City of San Diego
Nicole Miller	Managing Director, Biomimicry 3.8
Shoshanah Jacobs	Assistant Professor, University of Guelph

# Webinar Audience

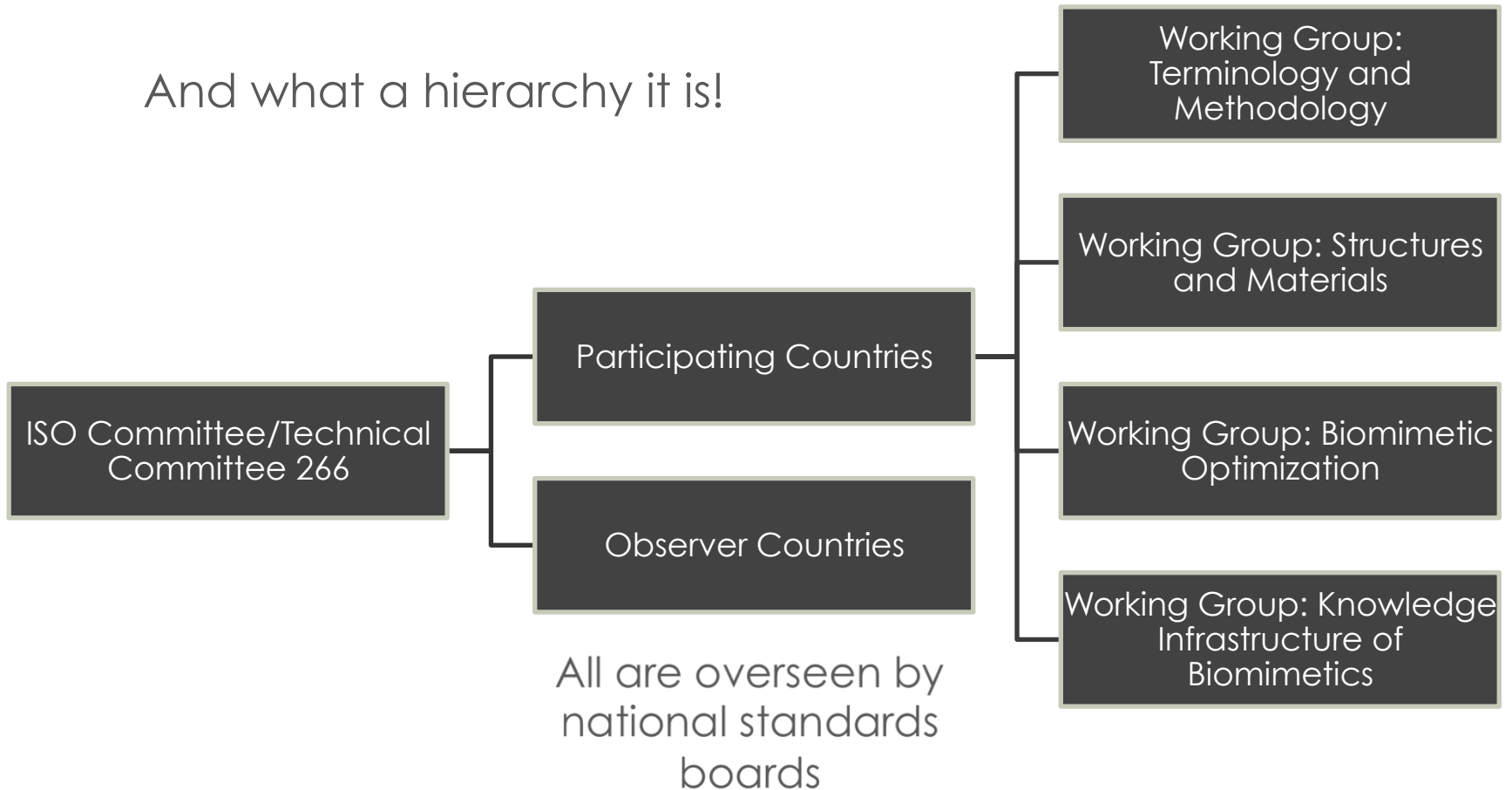
Kamelia Mitevia	Founder and CEO of Bio Games
Manuel Quirós	Professor of Ecodesign and Biomimicry, Istituto Europeo di Design

# Today's purpose

- Determine what we know
- Develop a list of questions
- Determine how best to get answers
- Agreeing on a plan going forward

# The Decision-Making Hierarchy

And what a hierarchy it is!



# Participant vs Observer Countries

## Participant

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9 Countries: Belgium, China, Czech Republic, France, Germany, Israel, Japan, Republic of Korea, UK

Voting committee members

Form working groups (WGs)

The writing of the standards gets done in the technical groups; They respond to comments from participants and observers

## Observer

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15 Countries

No voting privileges

Cannot participate in WGs

Provide comments to WGs during annual TC meetings

US is currently one, but if we form a Technical Advisory Group (TAG) we can become a participating group

# Committee progress to date

- Parallel work flows with ISO process and Working Groups that support it
- Completed 3<sup>rd</sup> ISO meeting (Berlin 2011; Paris 2012; Prague 2013)
- Process through 2016 with cycles of drafts by the WGs and votes
- Meetings will be held in various Participating Countries, normally once per year
- Next ISO meeting in Brussels on 29 Oct 2014; Working Groups meet Oct 27-28

# Committee progress, cont.

- New WGs are formed as needed.
- Most of the background is based on a German technical engineering definitions (VDI); Process seems to be driven by the German group who created the standards
- The business brief seems to want to define biomimetics in a certifiable to reduce claims of a biomimetic process after the fact (e.g., for marketing purposes)
- One of the comments from the UK said that the briefing was currently too inward looking and didn't address who the standard would affect outside the committee. This has progressed since the original documents.
- The terminology committee has submitted the first draft re: definitions to ISO for approval



# What does this mean for this group?

- Need somehow (more on next slides) to become a member of ANSI and form a Technical Advisory Group through ANSI (many unis and corporations are already.)
- Need to participate in Working Groups and attend (virtual) meetings 2-4 times per year
- Need to assign a representative(s) to go to ISO meetings and present our feedback about the drafts. This person must be trained by ANSI (1/2 day virtual trainings held 3x per year...next in June.)

# Option 1: Traditional Route

Item	Annual Cost	For 3 Years						
One-Time joining fee	--	\$4000						
Fees for being an ANSI administrator (annual or one time?)	\$5040 per year	\$15,120						
ANSI Membership Fees	\$3775 per year	\$11,325						
<table border="0"> <tr> <td>\$10 million+</td> <td>\$5,480</td> </tr> <tr> <td>\$1–10 million</td> <td>\$4,265</td> </tr> <tr> <td>Under \$ 1 million</td> <td>\$3,775</td> </tr> </table>	\$10 million+	\$5,480	\$1–10 million	\$4,265	Under \$ 1 million	\$3,775		
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Under \$ 1 million	\$3,775							
Travel costs ~\$1500/trip/person x 5 People  (Will vary enormously)	\$7500 per year	\$22500						
<b>Totals</b>	<b>\$16,315</b>	<b>\$52, 945</b>						

## Option 2: ANSI's Enhanced Services Program

- ANSI serves administratively as the TAG rep for us and we gradually take over the process.
- No \$5040 TAG fee, No application fee, but at least one of our orgs would need to be full member.
- Costs for this also range between \$20-\$40K, but she couldn't give an actual price. Might be worth exploring more.

## Option 3: Work with an existing ANSI member

- We become “The American Society for Bio\*”, officially. If necessary, become an IRS “Business League” or “Trade Assoc” 501(c)6
- Then, we find an organization that already has membership on the ANSI website and get involved with them as the representative organization.
- <https://eseries.ansi.org/Source/directory/>
- Potential orgs:
  - Georgia Tech Energy and Sustainability Services
  - USGBC
  - Other connections

# Option 4: Go directly to ISO

- Likely a dead end option, but...
- Given the experiences of other people involved, our costs through ANSI seem very high
- Worst case scenario, we try the unlikely option of working directly to ISO, appealing to them to put pressure on ANSI so this process is not so cost prohibitive

# Option 5: Create a US standard

- The Institute for Market Transformation to Sustainability  
<http://mts.sustainableproducts.com/members.htm>
- (Charter Members included The Natural Step, McDonough and Braughnaut, Interface, etc.) Do consensus based standards creation; Created SMART product certifications
- Views ISO/ANSI as an industry-driven greenwashing process
- Offered the possibility of leading a concensus-based Biom standard creation process (6-months), potentially as a subset of SMART, if we draft it.
- Cost?

# Other considerations:

- Who has the capacity/interest to get involved in this?
- Create a new working group to address biomimicry + sustainability in the ISO process?
- Who would be interested in funding participation or the creation of a standard?
- Next meeting in 2-3 weeks?

# Why ISO Standard?

- Documentation of knowledge and accessing the knowledge infrastructure to other interested party.
- The standard provides guidance and support for developers, designers, and users who want to learn about the biomimetic development process and integrate biomimetic methods into their work.



# Why ISO Standard?

- Companies are increasingly turning to biomimetic methods to develop new products. Using the label “biomimetic” for sales & marketing should be justified. (Just like green products).



# The participants

- Official delegations
- Private stakeholders

# Main Task

- The main task of technical committees is to prepare International Standards.
- Draft International Standards adopted by the technical committees are circulated to the member bodies for voting.
- Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

# What we do?

## Communication channels:

- A yearly meeting
- Web meetings
- Electronic voting
- DIN system – accessibility to all documents

## Discussions about the contents of the drafts:

- Major issues – Example: Is the engineered spider silk can be considered as biomimetics?
- Minor issues – Formulation issues

# Biomimetics — Terminology, concepts and methodology

- Differentiating between biomimetic and non-biomimetic products based on yes or no system
  - Biological system
  - Abstraction
  - Transfer - without using the biological system

# Other topics:

- Terminologies: Differences between biomimicry, biomimetics, bionics, bioengineering, biotechnology and so on....
- Reasons and occasions for using biomimetic methods
- Possibilities, performance, and success factors for biomimetics
- Biomimetics and sustainability
- Limits of biomimetics
- Biomimetic engineering process
- Abstraction and analogy
- From the planning phase to the invention

# Benefits

- An opportunity to contribute to this major effort
- An opportunity to learn from others:
  - Enriching discussions on the core of biomimetic
  - Observing cultural differences
- Networking: Meeting biomimetic researchers and practitioners around the globe

Questions and Comments?