

# The Project Leonardo Da Vinci 2019:

## Creativity for Sustainability

### Overview:

As we move further into the 21<sup>st</sup> century, the world faces many new and unexpected sustainability challenges. Some of the largest and most daunting of these are associated with the rapid and unrelenting increase in greenhouse gas levels that are accelerating climate change globally. Some of the most dramatic climate change induced problems are listed in Table 1.

Table 1. Major Climate Change Induced Problems

Problem	References
Decreased Agricultural Productivity and Increased Food Insecurity	<a href="https://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-031816-044356">https://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-031816-044356</a> <a href="http://advances.sciencemag.org/content/2/8/e1501452">http://advances.sciencemag.org/content/2/8/e1501452</a>
Flooding from ice losses, water expansion, storm surges, higher rainfall	<a href="https://www.sciencedaily.com/releases/2018/06/180613163031.htm">https://www.sciencedaily.com/releases/2018/06/180613163031.htm</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3758961/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3758961/</a> <a href="https://www.nature.com/articles/s41598-017-17966-y">https://www.nature.com/articles/s41598-017-17966-y</a> <a href="https://www.nytimes.com/2018/10/10/climate/hurricane-michael-climate-change.html">https://www.nytimes.com/2018/10/10/climate/hurricane-michael-climate-change.html</a>
Increased Storm Related Infrastructure Damage	<a href="http://unionsforenergydemocracy.org/wp-content/uploads/2015/08/sternreview_report_complete.pdf">http://unionsforenergydemocracy.org/wp-content/uploads/2015/08/sternreview_report_complete.pdf</a> <a href="https://www.theguardian.com/environment/2018/nov/23/climate-change-america-us-government-report">https://www.theguardian.com/environment/2018/nov/23/climate-change-america-us-government-report</a>
Environmental Refugees and Internally Displaced Persons	<a href="https://www.eesi.org/papers/view/issue-brief-the-national-security-impacts-of-climate-change">https://www.eesi.org/papers/view/issue-brief-the-national-security-impacts-of-climate-change</a>

In addition to these massive problems stemming from our rapidly changing climate conditions, the world also simultaneously faces other major “systemic sustainability” issues. These sustainability issues include energy problems (phasing out fossil fuels and phasing in of renewable energy), multiple primary resource limitations, the accumulation of huge amounts of highly varied waste streams such as plastics, electronics waste, construction waste, etc, and the social/political impacts of all of the above.

The global reach, scale and accelerating impact of these Climate Change and Sustainability problems briefly noted above, impact on everything.

Any solutions to these problems will have to deal with the incredible inertia of politicians, businesses and the public to the immense threat that these problems present, not just to our current lifestyles world-wide, but to the continuation of human society itself. A recent WEF report clearly demonstrated that one of the highest probability risks with the largest deleterious impact was “the failure of climate change mitigation and adaptation”. A sobering fact for example is that 90% of the world’s population lives with polluted air!

A major “job to be done” is to rapidly change awareness concerning the immense and

multiple dangers that climate change will bring to all life on this planet. There is also an urgent need to devise new strategies to reverse current deep seated public attitudes, often propagated by self-interested nay-sayers, and which allow society to ignore or minimize the threats just over the horizon.

By the time that huge swathes of the earth's population will be suffering the dire consequences of our current destructive and wasteful economic, energy, and industrial models, it will be too late. It is our premise therefore that early, novel solutions derived from open, science and culture based dialogue and coupled with clear societal and economic benefits across all levels -individual, local and of course global- are required. We therefore propose a new process to contribute to the acceleration of the search for novel ideas for solutions that can rapidly lead to the development of realistic and scalable projects. The key element of our "search for solutions" proposal is to actively seek creative, ingenious and motivated individuals who will work through a "Gestalt" like process to generate new insights and ideas, which are the core elements required to find badly needed solutions. Let us be perfectly clear: we do not wish to catalogue and discuss the depressing list of all that is wrong with the way that we are rapidly exhausting the finite resources of this planet. We seek to find original, practical and sustainable solutions. Our underlying message is one of optimism and a belief in humanities' capacity for innovation in both the technological and societal domains. This brings us to the next point:

Why the link to Da Vinci? Because even a cursory glance at the prodigious output of this unique, multidisciplinary genius reveals that he was capable of recognising problems that crossed multiple "disciplines", and efficiently propose highly original ideas that often led to applications that were, to one extent or another, feasible and applicable. Many people can have new ideas, very few make them happen, Da Vinci could do this and this is the spirit that we wish to celebrate and to emulate.

The Skellig Foundation and its partners feel that, in addition to looking to governments, business, universities, Foundations, etc to devise realistic new routes for sustainable living on this, our one and only planet, we need young people to participate in the process of proposing, developing, and implementing bold, dramatic new "step change" ideas.

Thus, the Skellig Foundation proposes, for 2019 a workshop entitled

### **Project Leonardo Da Vinci 2019- "Creativity for Sustainability"**

## **Organisation of the workshop:**

### ***Mission:***

The project will bring together an international group of 10 exceptionally creative young scholars for 10 days in Amboise, France in order to collectively develop and discuss their big, bold ideas for addressing major sustainability issues such as those listed above in Table 1. Their "Creativity for Sustainability" discussions will occur as part of the International 2019 celebrations commemorating the 500th anniversary of the death of Leonardo da Vinci, which is a global event. Two young journalists who work in the area of global sustainability will also be selected to join the young scholars group. Their task will be to document and follow the proceedings for the

general public.

### ***Goals:***

As stated above, a major objective for “Project Leonardo Da Vinci 2019- Creativity for Sustainability” is that discussions between the young scholars and their more experienced multidisciplinary mentors (academics and professional experts, “Les Sages”), will be inspired by the creative brilliance of one of the most renowned interdisciplinary geniuses of all time - Leonardo Da Vinci. Their simple, collective goal will be; to come up with one or more novel, potentially revolutionary, effective and provocative ideas that could significantly contribute to improving Global Sustainability within the relatively short time period that remains before a catastrophic heating loop takes hold

(<https://www.theguardian.com/environment/2018/aug/06/domino-effect-of-climate-events-could-push-earth-into-a-hothouse-state> ). The idea(s) proposed must target obvious key objectives, such as significantly reducing green-house gas emissions and accelerating the objectives of developing a circular economy. The idea(s) must be both realisable and scalable, and also importantly, be sufficiently compelling so as to convince the general public since it is they who as the final “customers” will implement the idea.

### ***Structure:***

The Project will fully fund the young scholars, in addition to two young journalists with experience in sustainability issues (who will both contribute to the discussions and develop a project specific blog), to attend “Project Leonardo Da Vinci 2019 “Creativity for Sustainability”. In order to attract and motivate the best global candidates, small cash prizes will also be awarded to the selected candidates during the discussion period at Amboise.

At least four academic project co-ordinators will be identified to help manage the main elements of the Project (especially the work of groups 3 and 4 as noted later) and they will receive funding to attend the discussion at Amboise as compensation for their work on the Project. To ensure that the Project is optimally executed, the Project co-ordinators will be supported by the Project Co-Chairpersons and the many multidisciplinary volunteers who will be associated with the specific teams outlined below.

The young scholars will be selected via an international competition. The selection criteria will be based on, the following criteria:

- 1) the submission of a letter of motivation that includes, two ideas that the candidates propose to discuss with their peers and the Mentors in Amboise,
- 2) a strategy to convince the general public that their ideas can reduce the sustainability danger(s) they address,
- 3) their CV's,
- 4) two letters of recommendation by people with whom they have worked in the past and who can independently describe how the candidate could contribute to collective discussions during the Project.

### ***End game:***

The workshop will start with the young scholars presenting their winning contest ideas to their peers and mentors. These ideas will then serve as a starting point for the iterative evolution of a smaller number of ideas, and/or act as springboards for the development of totally new ideas. These evolved and/or workshop ideas will be further developed by workshop teams that will coalesce around them. The teams can be composed of two or more of the young scholars based on their common interests, the expertise required to implement the idea(s) and the cohesion and synergy that exists in the team. The teams will be tasked with moulding the ideas(s) into feasible project proposal(s) to be presented at the end of the workshop in front of a select group of entrepreneurs, investors, academics and representatives of private companies who will judge and class the projects.

We expect a very fruitful dynamic will occur between the teams and the jury, and optimally there will be a very strong potential for ensuing interactions, ranging from start-ups, academic collaborations, financial investment, offers of employment and so forth. The role of the Skellig Foundation and the Leonard Project in this is simply as a catalytic facilitator and neither the Foundation nor the Project will in no way be associated with any of the structures that we anticipate to be the fruit of this workshop.

### **Steps of the Project:**

1) Feasibility Study; can the following key elements, and the required volunteers noted below, be identified to accomplish the different parts of the project ?

#### **Group 1.**

Fund Raising Group. Can they find the minimal funding needed for the project (60,000 euro; main costs are noted at end)?

#### **Group 2**

Organizing Group: this group will be responsible for organizing the following

- the site of the discussions (now identified as the Clos Luce the last residence of Leonardo Da Vinci)
- housing the young scholars, the 2 young journalists, the four Project co-ordinators, (this will ideally be 2-3 gites in or very close to Amboise for 5 - 8 people each that are located in close proximity to each other and the site of the discussions. If possible, a few key mentors may also be accommodated in these gites)
- housing for the expert mentors (to minimize costs, it is hoped that the experts, can be housed over their participation -1-3 days, rotating) by local individuals and families in their homes.
- meals for the young scholars and the visiting mentors (the academics and professional experts)
- Ideally to include 2-3 “cultural and team building side activities” for this group.

#### **Group 3**

- Running the competition to find and select the young scholars
- Finding the academics and experts; the mentors ... “Les Sages”

#### **Group 4**

Social media for the Project

Publicity for the Project  
Web back up for Group 3 (contest group)

In addition to the above, this group will also help in web based fund raising for the Project and any Project associated public events

## **Cost Estimates**

A) Full Housing (minimal 15 people, 12 + 3 co-ordinators)  
2-3 Gites, will need to have individual rooms (max 1500/week, 3,000 for 2 weeks x3.  
**TOTAL = 9,000 Maximum**

B) All Meals for 16 people  
60 per person/day/10 days  
 $600 \times 16 = \textbf{TOTAL 9,600}$

C) "Idea" cash prizes to be presented during one of the Project evening group dinners.  
2 top overall original idea prizes of 2000 Euro each, and different prizes for other 8 proposals (each 750 euro x 8 and 2 x 750 prizes for selected young journalists)  
 $4000 + 7,500$

**TOTAL 11,500 ("idea" prizes)**

Note: Project Scholars and key participants vote to select the two top prizes after hearing the idea presentations.

This is a key incentive for people to come!

D) Travel Expenses (only this will be paid in advance ...)  
1000 outside EU  
500 in Europe Ireland and UK  
Approx. 6 outside EU and 4 within EU  
1 young journalist in EU one outside (1,500)  
**TOTAL approx 9,500**

E) Funds for the 4 project members, the "Project Coordinators" (ideally junior faculty or post-doctoral fellows). These people will, in collaboration with various other project members, be key people working on the development and organization of the project. They will also be responsible, with the help of the afternoon session "Chairpersons" for the day to day work activity of the Fellows and Mentors in Amboise. These four people will need to be recruited.

- Travel funds for organizers outside France (up to 800 euro, 2 = 1600)
- Travel funds for organizers in UK/EU (up to 400 euro, 2 = 800)
- Small "grants" will be awarded to each co-ordinator to enable them to hire undergraduate students to be paid to work on various aspects of the project up to a total of 3,000 euro (up to 1,000 euro per co-ordinator, 4=4000)

**TOTAL 6,400**

F) Other Organization Expenses including  
- additional promotion/advertising/web associated as necessary

- some contributions to travel and accommodation expenses of academics
- additional meal costs, including visiting mentors (lunches and dinners for 4 mentors and 4 additional project participants each of the 10 days,  $(80 \times 50 = 4,000)$  during the work of the project

**TOTAL 10,000**

G) Unforeseen Budget

10,00 Buffer “unforeseen expenses” (if unused this goes for next “ Skellig Project”)

**TOTAL 66,000**

**GRAND TOTAL (imagined so far without any inputs of the people to be recruited to organize and run the project)**

**= 66,000 euro**

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**Chairpeople for Project Leonardo da Vinci 2019**

Dr. Malcolm Buckle (Scientist and entrepreneur)  
 Directeur laboratoire de Biophysique (LBPA) CNRS at l’ENS Paris-Saclay  
 (Team leader LBPA 2000 - 2015; CNRS , Pasteur from 1986 –2000; Post Doctoral Fellowships in Canada and Italy (1980-1986); 100 scientific articles (index 33), 1 patent (2 in progress).

Dr. James McCarthy (Research Scientist, Plant Science/Plant Systems Biology)  
 Nestle Research (1992 - present)  
 Post Doctoral Fellowships at Mass Institute of Technology (1986 - 1990) and Univ. of Paris (1991) Institut Pasteur (1992), PhD U. of Connecticut (1986)

List of Mentors (more people to come ....)

1. Prof. Frederic Dias, School of Mathematics & Statistics, University College Dublin.
2. Dr. Gavin Collins, Lecture in Microbiology, Univ. College Galway, Ireland
3. Dr. Franck Michoux, Biotechnology Entrepreneur and Head of Evonik Advanced Botanicals, Parcay Meslay
4. Dr. Theresa O’Connor, Writer and Environmental Humanities Scholar, Skellig Foundation.
5. Dr Sebastien Moreau, University of Tours, France and President of ZeroDechet Touraine (Zero Waste).