*The **CREA**tion of the Department of Physical Chemistry of Biological Sys**TE**ms [CREATE]*

666295 — CREATE — H2020-WIDESPREAD-2014-2015/H2020-WIDESPREAD-2014-2

Report on awareness and wider societal implications

[Deliverable D.7.3]

Level of dissemination: Public

Warsaw, March 2021

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 666295

TABLE OF CONTENTS

1. Introduction

The report aims to describe **the wider societal implications of the CREATE project and taken efforts to involve other actors and spread awareness**.

In the subsequent parts of this document we explain ethics issues in the project (2.1), present workforce statistics for the project (2.2), describe its gender aspects (2.3), synergies with science and education (2.4), interdisciplinarity (2.5), engaging with civil society and policy makers (2.6) and general information about the use and dissemination of knowledge within the project (2.7).

2. Spreading awareness and widening societal implications of the CREATE project

2.1 Ethics

The CREATE project is implemented under the Coordination and support actions. H2020 does not provide the project with the funding for research. For this reason to supplement the action, we have applied for various research funding. These research projects were subject to detailed screening in terms of their compliance with ethical and legal norms by funding agencies. Below we present description the main ethical issues that arises from the research approved by national and international funding agencies.

Ethics - self-assessment	
1. Human embryos/foetuses	
• Human Embryonic Stem Cells (hESCs)	NO
• use of human embryos	NO
• human foetal tissues / cells	NO
2. Humans	
• human participants	YES

Comment: All research protocols involving human subjects conducted at IPC respect the following international conventions and declarations:

- Helsinki Declaration: Clinical trials will be conducted in accordance with the World Medical Association Declaration of Helsinki,
- Convention of the Council of Europe on Human Rights and Biomedicine signed in Oviedo, 4 April 1997,
- Protocol on the Prohibition of Cloning Human Beings signed in Paris, 12 January 1998,
- Universal Declaration on the human genome and human rights adopted by UNESCO.

All studies involving human subjects have been conducted in agreement with the following protocol:

1) Proper Ethics Committee is chosen according to the scope of studies and the medical staff involved in the project – according to Polish regulations all studies involving humans should involve physicians. Most of the medical staff in Poland is associated either with local medical chambers or university clinics. Both institutions are able to grant ethics approvals.
2) The proper Ethics Committee has been informed on the procedures that will be used for the recruitment of participants and the nature of the examination. Informed consent will be obtained from participating volunteers and patients. Copies of examples of Informed Consent Forms and Information Sheets that are approved by the Ethics Committee.
3) Children or adults unable to give informed consent have been excluded.

4) Recruited volunteers cannot be in formal relationship with the group leader. Postdocs as well as undergraduate and graduate students from Department of Physical Chemistry of Biological Systems are excluded.
5) Patients with diseases have been recruited from the hospitals or private clinics included in the approvals.
6) Patients have been examined first by physicians with standard medical instrumentation.
7) Before the measurements participants have been informed about their rights, particularly:
   - To know that participation is voluntary
   - To ask questions and receive understandable answers before making a decision
   - To know the degree of risk and burden involved in participation
   - To know who will benefit from participation
   - To know the procedures that will be implemented in the case of incidental findings
   - To receive assurances that appropriate insurance cover is in place
   - To withdraw themselves, their samples and data from the project at any time
   - To know how their biological samples and data will be collected, protected during the project and destroyed at the end
   - To know of any potential commercial exploitation of the research.
   - Person conducting examination will be able to answer all related questions.
8) Laboratory measurements on patients have been performed with personal assistance of physicians. Data have been acquired using dedicated set-up with constantly monitored elements that may introduce health risk. All-important parameters have been kept at the level permitted by EU, Polish and ANSI standards for stationary beams.

Privacy/confidentiality procedures have been implemented for data collection, storage, protection, retention and destruction and confirmation that they comply with national and EU legislation

• physical interventions on the study participants	NO
• invasive techniques	NO
3. Human cells / tissues	
• human cells or tissues (other than from human embryos/foetuses)	NO
4. Personal data	
• personal data collection and/or processing	NO
• further processing of previously collected personal data (secondary use)	NO
5. Animals	
• animals	YES

Comment: The research plans also requires using mouse and rats as well as genetic modified mice and rats. All animal procedures are approved by local ethical committees of collaborating institutions, which have authorized animal facilities that meet legal requirements, are under veterinarian control, and handled by qualified personnel to minimize any possible discomfort to the animals. All procedures adhere to the national and international laws and provisions regarding the protection of animals. In particular, all animal experiments will be performed by authorized personnel under the rules of each given country according to EC Directive 86/609/EC. Animals are housed and cared in professional animal

facilities and they are provided with food and beverage ad libitum and will be placed in proper cages with adequate bedding. Research and housing of animals is conducted according to the EU directive 86/609/EC, regarding the protection of animals used for experimental and other scientific purposes. Mice and rats used are widely recognized as the official species to conduct cell implantation and to pharmacological studies and also for molecular imaging studies.

In the first place non-living alternatives to their animal models were chosen. Animals were used only in case that the nature of the studies necessitates involving entire organisms *in vivo*. The principles of the "3Rs" (Reduction, Refinement and Replacement) were applied. Copies of ethical approvals by the competent local/national ethical/legal bodies, together with copies of relevant authorizations for animal experiments were forwarded to research funding agencies prior to the commencement of the research.

Sedation and anesthesia were administered to the animals during imaging procedures in accordance with protocols approved by the ethics committee associated with the animal care facilities. Usually the purpose of the anesthesia is to immobilize the animals during the studies. While anesthetized, the animal were comfortably rested and immobilized. Heart rate and breathing rate were monitored to assess depth of anesthesia and undergo proper actions in case of increased stress. At the termination of each study, anesthetized animals may be retained for additional imaging at a different time or euthanized to obtain retinal histology. Euthanasia has been be performed by CO2 inhalation in accordance with the ethics protocol. This method is consistent with the recommendations of the EU directive 86/609/EC.

6. Third countries	
• non-EU countries	NO
• the use of local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples)	NO
• import of any material from non-EU countries into the EU	NO
• export of any material from the EU to non-EU countries	NO
• low and/or lower middle income countries and benefits-sharing measures foreseen	NO
• the situation in the country that may put the individuals taking part in the research at risk	NO
7. Environment & health and safety	
• the use of elements that may cause harm to the environment, to animals or plants	NO
• research deals with endangered fauna and/or flora and/or protected areas	NO
• the use of elements that may cause harm to humans, including research staff	NO
8. Dual use	
• the potential for military applications	NO
9. Misuse	
• the potential for malevolent/criminal/terrorist abuse	NO
10. Other ethics issues	
• other ethics issues that should be taken into consideration	NO

2.2 Workforce statistics for the project

Workforce Statistics		
1. Workforce statistics for the project[1]		
Type of Position	**Number of Women[2]**	**Number of Men[1]**
Coordinators & project managers	1	2
Work package leaders[3]	2	1
Experienced researchers (PhD holders)	0	7
Early-stage researchers, incl. PhD Students	3	1
Other (technicians, interns and administration)	19	5
2. Additional researchers (in companies & universities) recruited specifically for this project		
All types of positions	N/A	

2.3 Gender aspects

The Institute of Physical Chemistry, Polish Academy of Science (IPC) is a holder of the "HR Excellence in Research" award since 2014 (renewed – 2020). It means that we have constantly been working on the improvement of working conditions for researchers, strengthening recruitment procedure but also improve the educational offer for researchers. Our recruitment policy respect the open, transparent and merit-based principles. The gender dimension is also adequately addressed not only in the recruitment policy but also other policies and practices of IPC. In particular, at IPC:

- we have gender-balanced recruitment committees (at least 1/3 representation of each gender among recruitment committee members) and Career Development Advisers,
- assessing a track record of the researchers (evaluation) and candidates for research positions (recruitment) we take into account only effective years of work (we allow for variations in the chronological order of CVs),
- to facilitate appointments of researchers with parental obligations we acknowledge the postdoctoral fellowships at other Polish research units as sufficient to set own research group (if other conditions are fulfilled),
- we maintain permanent position of the Commissionaire for Researchers' Rights in place,
- we have clear anti-mobbing provisions and peers reviewing each potential mobbing case,
- we offer social fund to support those in a need.

The full description our HR policy is located at our webpage (Institute, CSR section).

Since an improvement HR management was among the objectives of the CREATE project, the ERA Chair holder, Professor Wojtkowski was invited to become the adviser to the Working Group for development of a human resources strategy for the researchers (HRS4R). Many ideas of Professor Wojtkowski were

[1] This table reflects employees whose remuneration cost debited the CREATE project. Some other group members of Professor Wojtkowski were remunerated under other research projects and, as such, are not included in this table.

[2] The number of people who worked on the project (on a headcount basis).

[3] Excluding Coordinators & project managers being also work package leaders.

implemented. Besides, Professor Wojtkowski contributed significantly to the improvement of research management at IPC entering the Scientific Board.

Gender Aspects	
1. Did you carry out specific Gender Equality Actions under the project?	NO
Comment: The CREATE project took advantage of the Gender Plan in place at IPC. However, it has contributed to the further implementation of the provisions underlying the European Charter for Researchers and the Code for Conduct in the Recruitment of the Researchers, being the basis for the overall HR strategy for researchers at IPC.	
2. Which of the following actions did you carry out and how effective were they?	

		Not at all effective				Very effective
X	Design and implement an equal opportunity policy	○	○	○	○	X
❑	Set targets to achieve a gender balance in the workforce	○	○	○	○	○
❑	Organise conferences and workshops on gender	○	○	○	○	○
❑	Actions to improve work-life balance	○	○	○	○	○
❑	Other					

3. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?	NO

2.4 Synergies with science and education

Synergies with Science Education	
1. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?	YES
Comment: Under WP6 we have organized multiple events for pupils and students, e.g.: • **Open days:** Open day in Physical Optics and Biophotonics group; Open day in the X-ray laboratory (details on the CREATE webpage); • **Others:** Science Festivals, Inspiration Days, Science Picnics ("We and the machines", "Movement"), Children Science Festival, Popular science lectures "How physicist and chemist look at life - what for a biologist needs physicochemistry?, Cognitive adventures, ESOF (popular science conferences), The district's competition "THE GLASS AND EYE" (details on the CREATE webpage).	
2. Did the project generate any science education material (e.g. kits, websites, explanatory booklets)?	YES
Comment: We have produced the following educational materials: • Project webpage (www.create.edu.pl), • Press notes (details on the CREATE webpage); • 10 films (details on the CREATE webpage);	

2.5 Interdisciplinarity

Interdisciplinarity
1. Which disciplines) are involved in your project?
Main discipline: Natural Sciences (Chemical sciences, Physical sciences)
Associated discipline: Natural Sciences (Biological sciences)
Associated discipline: Medical and health sciences (Clinical medicine, Health sciences)

2.6 Engaging with civil society and policy makers

Engaging with Civil society and policy makers	
1. Did your project engage with societal actors beyond the research community?	YES
2. If yes, did you engage with citizens (citizens' panels / juries) **or organised civil society** (NGOs, patients' groups etc.)?	
○	No
○	Yes - in determining what research should be performed
○	Yes - in implementing the research
X	Yes, in communicating /disseminating / using the results of the project
3. In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)**?**	NO
4. **Did you engage with government/public bodies or policy makers** (including international organisations)	
○	No
X	Yes - in framing the research agenda
X	Yes - in implementing the research agenda
X	Yes, in communicating /disseminating / using the results of the project
Comment: Particularly, we have involved the representatives of the Polish authorities to constitute the CREATE Advisory Board and advise us on the project implementation, selection of research, building external relations.	
5. Will the project generate outputs (expertise or scientific advice) **which could be used by policy makers?**	
○	Yes – as a **primary** objective (please indicate areas below- multiple answers possible)
X	Yes – as a **secondary** objective (please indicate areas below - multiple answer possible)
○	No
Comment: Areas of expertise / scientific advice: • Education, Training, Youth • Research and Innovation • Public Health • Regional Policy	

2.7 General information about the use and dissemination of knowledge within the project

Use and dissemination		
1. How many Articles were published/accepted for publication in peer-reviewed journals?		31[4]
2. To how many of these is open access provided?		31
How many of these are published in open access journals?		28
How many of these are published in open repositories?		3
To how many of these is open access not provided?		0
3. How many new patent applications ('priority filings') have been made? *("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).*		4[5]
4. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	Trademark	0
	Registered design	0
	Other	0
5. How many spin-off companies were created / are planned as a direct result of the project?		N/A[6]
Indicate the approximate number of additional jobs in these companies:		N/A[4]

6. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:

X	Increase in employment, or	❑	In small & medium-sized enterprises
❑	Safeguard employment, or	❑	In large companies
❑	Decrease in employment,	❑	None of the above / not relevant to the project
❑	Difficult to estimate / not possible to quantify		

7. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (FTE = one person working fulltime for a year) jobs	N/A

[4] Including four of synergetic groups.

[5] Including three of synergetic groups.

[6] Currently unknown.

Media and Communication to the general public			
1. As part of the project, were any of the beneficiaries professionals in communication or media relations?			YES
2. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?			NO
3. Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?			
X	Press Release	**X**	Coverage in specialist press
❑	Media briefing	**X**	Coverage in general (non-specialist) press
X	TV coverage / report	**X**	Coverage in national press
X	Radio coverage / report	❑	Coverage in international press
X	Brochures /posters / flyers	**X**	Website for the general public / internet
X	DVD /Film /Multimedia	**X**	Event targeting general public (festival, conference, exhibition, science café)
4. In which languages are the information products for the general public produced?			
X	Language of the coordinator	**X**	English
❑	Other language(s)		