

The Global “DIYbio” Community

Who what when and where...and what are the
implications

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NC STATE

Our shared purpose is to:



&



to



inspire
creativity



improve
lives

unofficial
documentation

statement
version 3.0

by organizing

life science
change-makers

and bioenthusiasts



to build an inclusive global network,
cultivate an accessible commons of knowledge
and resources,



launch community labs + projects,



and enable local educators.

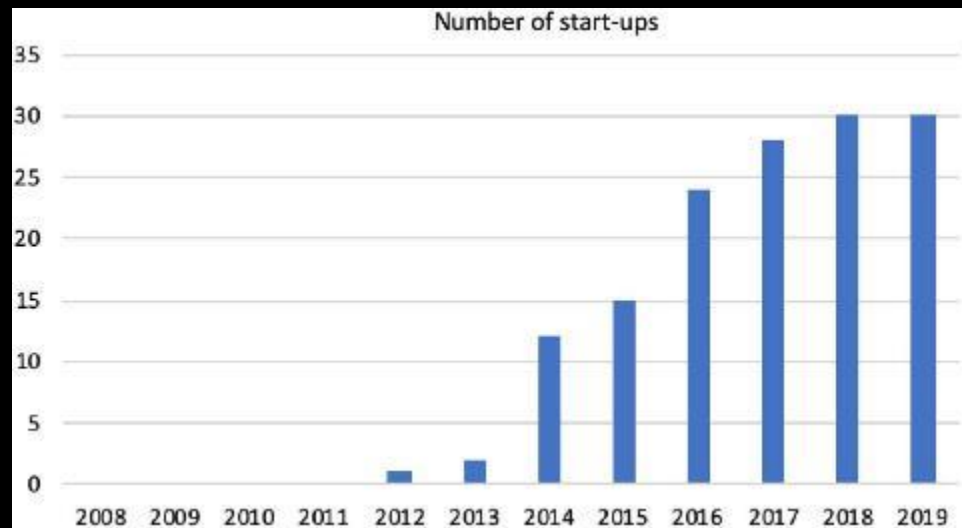
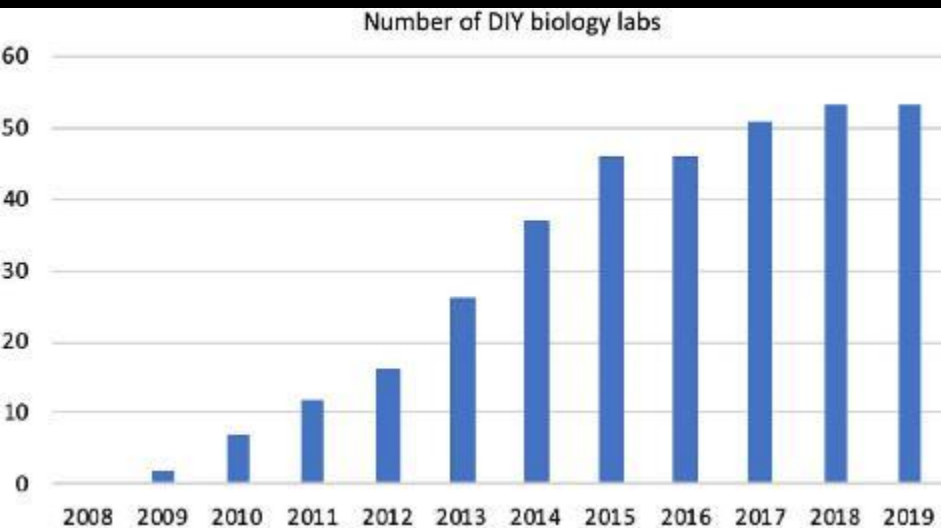


Origins of DIYbio...



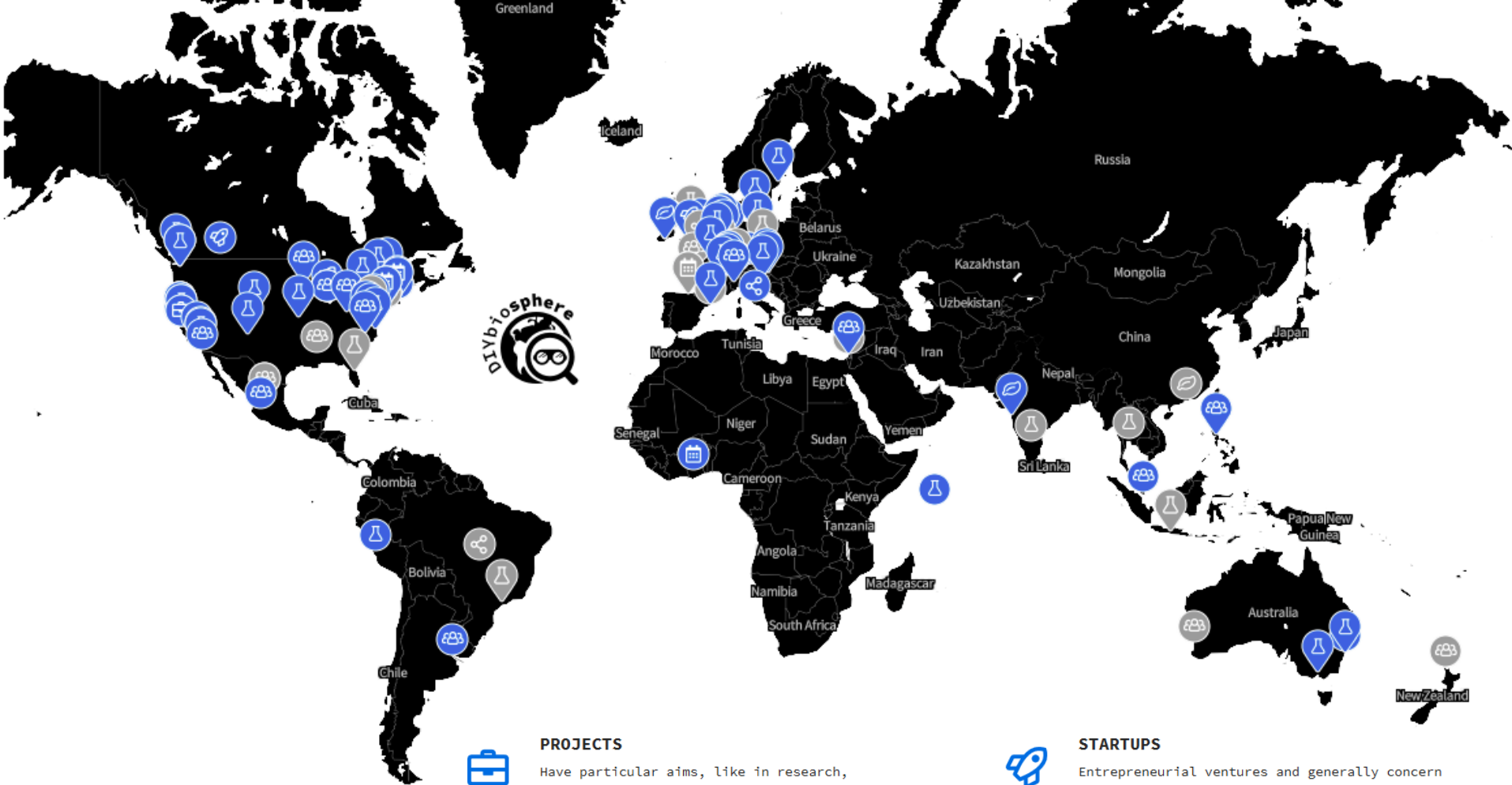
May 2008 – 1st “official” DIYbio meet-up in U.S. (with a picture)
Similar events were occurring across the globe
December 2010 – 1st community labs open in U.S.

Growth in “DIY” labs and start-ups



Meyer, M. and Vergnaud, F. *The rise of biohacking: Tracing the emergence and evolution of DIY biology through online discussions*. Technological Forecasting and Social Change. Volume 160, November 2020.

<https://doi.org/10.1016/j.techfore.2020.120206>



PROJECTS

Have particular aims, like in research, engineering, art and design



LABS

Dedicated physical spaces, static or mobile, with materials and equipment



GROUPS

Associations of people (online and offline) interested in DIYbio



EVENTS

Global or regional events by and/or for the DIYbio community



STARTUPS

Entrepreneurial ventures and generally concern products or services



INCUBATORS

Organizations and spaces that help projects and startups to develop



NETWORKS

Organizations that facilitate communication and collaboration



OTHERS

Umbrella term for the rest of misfit entries. New collections may arise

<https://sphere.diybio.org/>



Responsible Conduct from the Beginning (2011)

Draft DIYbio Code of Ethics from European Congress

Transparency

Emphasize transparency and the sharing of ideas, knowledge, data and results.

Safety

Adopt safe practices.

Open Access

Promote citizen science and decentralized access to biotechnology.

Education

Help educate the public about biotechnology, its benefits and implications.

Modesty

Know you don't know everything.

Community

Carefully listen to any concerns and questions and respond honestly.

Peaceful Purposes

Biotechnology must only be used for peaceful purposes.

Respect

Respect humans and all living systems.

Responsibility

Recognize the complexity and dynamics of living systems and our responsibility towards them.

Accountability

Remain accountable for your actions and for upholding this code.

Draft DIYbio Code of Ethics from North American Congress

OPEN ACCESS

Promote citizen science and decentralized access to biotechnology.

TRANSPARENCY

Emphasize transparency, the sharing of ideas, knowledge and data.

EDUCATION

Engage the public about biology, biotechnology and their possibilities.

SAFETY

Adopt safe practices.

ENVIRONMENT

Respect the environment.

PEACEFUL PURPOSES

Biotechnology should only be used for peaceful purposes.

TINKERING

Tinkering with biology leads to insight; insight leads to innovation.

When we held the coding workshops there were only a handful of actual “labs” in the U.S. and across Europe. 5 countries represented in Europe and 6 labs in the U.S.



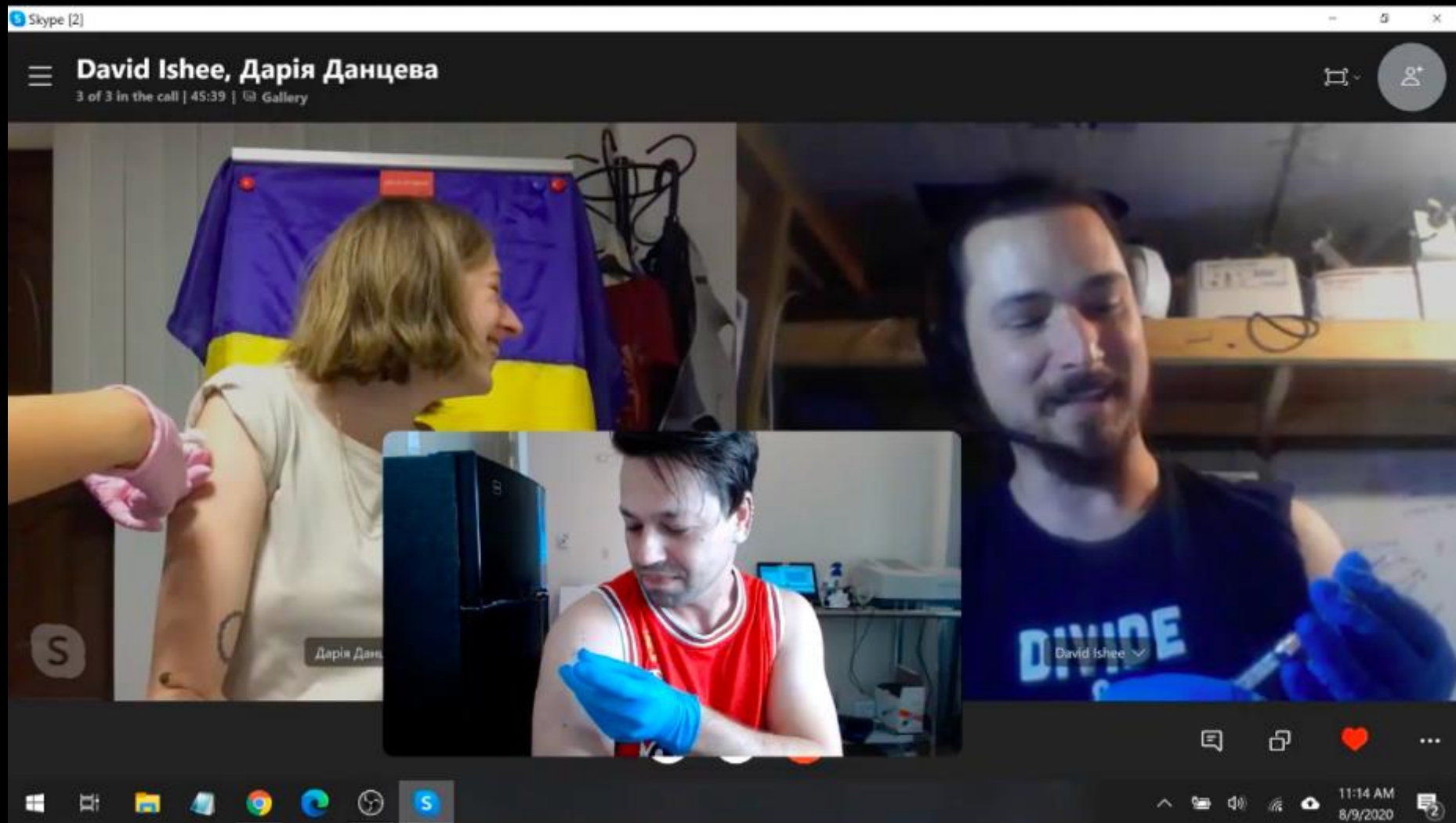
**ABSA International DIYbio Biosafety Boot Camp
Baltimore Underground Science Space (BUGSS)
Baltimore, MD Course Schedule**

At least one break will be included in the morning and afternoon

Sunday, August 25		
9:00am	Welcome/Introductions	Carrie Smith
10:30 am	Risk Assessment	Pat Condreay
12:00am	Interactive Exercise #1: Consequence and Probability	
1:00pm	Lunch	
2:00pm	Hazard ID	Dee Zimmerman & Pat Condreay
3:30pm	Interactive Exercise #2: Hazard ID and Resources	
4:45pm	Containment Equipment	Carrie Smith
5:30pm	Personal Protective Equipment (PPE)	Brandon Hatcher
6:00pm	Dismissal	
Monday, August 26		
9:00am	Laboratory Practices	Dee Zimmerman
10:00am	BSC and Glove Demo	
11:00am	Facilities Design Features: BSL 1-4	Pat Condreay
12:00n	Interactive Exercise #3: Lab Design	
1:15pm	Lunch	
2:15pm	Decontamination	Brandon Hatcher
3:15pm	Chemical Hazard Communication	Pat Condreay
3:45pm	Waste Management	Carrie Smith
4:45pm	Interactive Exercise #5: Decontamination & Disposal	
6:00pm	Dismissal & Group Dinner	
Tuesday, August 27		
9:00am	Shipping & Transportation	Carrie Smith
10:00am	Occupational Health & Emergency Response	Dee Zimmerman
11:30am	Biosafety Program Management & Communication	Pat Condreay & Brandon Hatcher
12:30pm	Lunch	
1:30pm	Interactive Exercise #6: Roundtable Discussion	
3:30pm	Dismissal	



What about in the midst
of a global pandemic?



Screenshot of Josiah Zayner's YouTube channel,
August 9, 2020

Slide courtesy of Alex Pearlman @Lexikon1
or alexpearlman.com



“

“I want to reiterate we are not trying to create a treatment for covid or sell anything we are trying to show people what is possible with biomedical research in a DIY setting...”

— Josiah Zayner on Facebook 8/7/2020

Slide courtesy of Alex Pearlman @Lexikon1
or alexpearlman.com



<https://radvac.org/>

Image courtesy Alex Hoekstra,
Radvac

Slide courtesy of Alex Pearlman @Lexikon1
or alexpearlman.com

“

“We’re going for ‘engaged consent.’ This goes beyond informed consent... We want engagement and we want people to critique our work. We’re not looking for passive participants.

— Alex Hoekstra, Radvac

Slide courtesy of Alex Pearlman @Lexikon1
or alexpearlman.com

Open Covid Ethics Study



Hello! We are researchers who have received NSF funding for an IRB-approved study to look at research ethics in the DIYbio community. By observing the discussions on Slack and within the JOGL platform, we hope to understand the challenges and innovations related to research ethics in the Open Science community.

Research Team



PI
Anna Wexler, PhD
University of Pennsylvania



Co-PI
Lisa Rasmussen, PhD
University of North Carolina at Charlotte



Clinical Research Coordinator
Rebekah Choi, MPH
University of Pennsylvania



Digital Ethnographer
Alex Pearlman, MA
University of Pennsylvania

All the data we collect will be totally anonymized, including names, usernames, and personally identifying information. But, if you would like to fully “opt out” and have all your data excluded from our study, please [fill out this form](#).

Consultants to the Research



Sarah Ware, PhD
BioBlaze Community Bio Lab



Todd Kuiken, PhD
North Carolina State University



Christi Guerrini, JD, MPH
Baylor College of Medicine



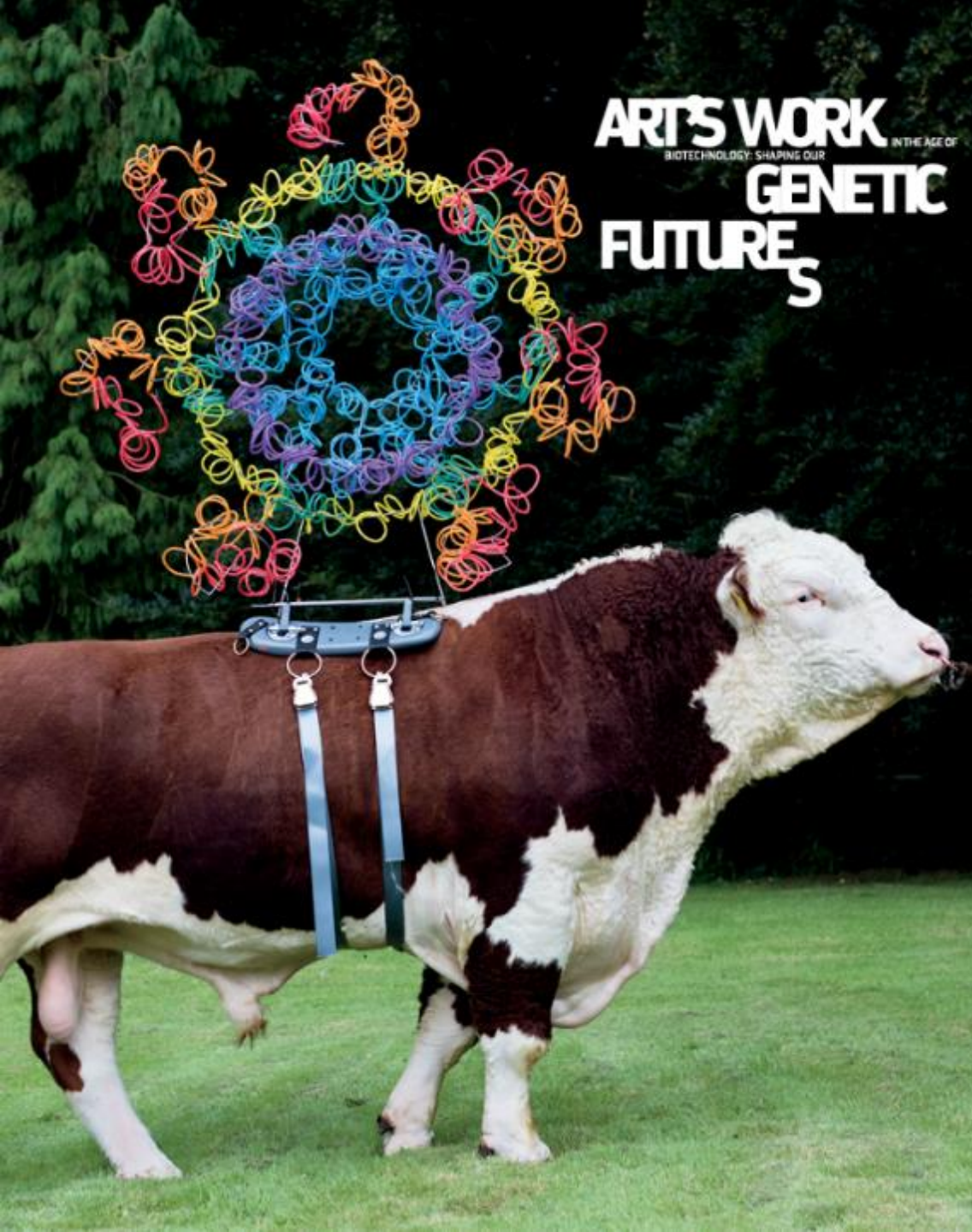
Joanna Kempner, PhD
Rutgers University

[Home](#)

From: OpenCovid19 Initiative

Dear community,

<https://app.jogl.io/program/opencovid19>



Art's Work in the Age of Biotechnology: Shaping Our Genetic Futures was an art-science exhibit eliciting discussion about genetics in society through the lens of contemporary art and offers viewers new ways to think about their role in the genetic revolution.

www.go.ncsu.edu/artswork

Catalogue available here:

<https://www.uncpress.org/book/9781469659268/arts-work-in-the-age-of-biotechnology/>

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