



BANBURY CENTER

BANBURY CENTER

EXECUTIVE DIRECTOR'S REPORT

After an especially tumultuous 2020, COVID-19 vaccines brought optimism for in-person convening in 2021. However, as the year progressed, continued uncertainties and new viral variants led to further postponements. As a result, the Banbury Center remained closed to in-person meetings for the duration of 2021.

Activities

Virtual meetings continued to be unrealistic for most Banbury discussions, chiefly because the format limits informal engagement, which can be the most productive time for open discussion and building connections. However, we were once again able to bring together three groups remotely. We continued remote discussions with our *Environmental Consequences of Deep-sea Mining* expert group. Led by organizers Anna Metaxas (Dalhousie University) and Verena Tunnicliffe (University of Victoria), and facilitated by Maya Breitburg-Smith (RESOLVE), the two virtual meetings took on the difficult task of narrowing objectives for the eventual in-person meeting. As a result of the virtual efforts, working groups were formed that met semiregularly throughout 2021 to further discussions on three specific subtopics. In April, Banbury virtually convened the CSHL *Technology and Education Council* (TEC), an advisory group comprised of senior scientists from the pharmaceutical and biotechnology industries. The high-level discussions covered three main topics: diversity in clinical trials, indirect effects of COVID-19, and challenges of data. Insights from the day's conversations will provide themes for future Banbury Center meetings. Finally, in December, we virtually kicked off the planned 2022 meeting, *Making Career-spanning Learning in the Life Sciences Inclusive and Effective for All*. Expert participants from around the globe came together to review the meeting objectives, and to start work on case study challenges faced by short-format trainers in the life sciences.

In addition to virtual work, the Center was energized by three 2021 publications resulting from prior Banbury meetings. Participants in the 2019 in-person and 2020 virtual follow-up meetings on *Bridging the Research-to-Practice Chasm in Digital Mental Health* published the “Banbury Forum consensus statement on the path forward for digital mental health treatment” in *Psychiatric Services*. The 2020 *MAVEN Project* leadership team produced “Introducing the MAVEN Leadership Training Initiative to diversify the scientific workforce” in *eLife*. Finally, participants from Banbury's last in-person meeting before the COVID-19 shutdown (*Copper Cancer Consortium*) published “Connecting copper and cancer: from transition metal signalling to metalloplasia” in *Nature Reviews Cancer*.

Although COVID-19 prevented in-person convening, the estate was humming in 2021 with renovations to Sammis Hall. The newest of the estate's three residence buildings, Sammis Hall has



provided housing for meeting participants, summer courses students, and CSHL Meetings attendees since 1981. Renovations added en suite bathrooms to each room, removing the need for sharing bathrooms in a “post-COVID” world. The makeover also added to the estate’s accessible guest rooms, improving our ability to accommodate participants with disabilities at future meetings.

Support

Funding is always a major hurdle to organizing Banbury meetings, as topics often fall at new intersections of science and technology or deal with delicate ethical or policy issues. We are ever grateful to the organizations and individuals that provide the financial support to enable Banbury to convene global leaders. The CSHL Corporate Sponsor Program remains a critical resource for cutting-edge meetings and provided the necessary funds to support virtual convenings. In 2021 we are especially grateful to our funding partners who graciously extended grants so that we could postpone meetings, rather than cancel or attempt virtual conversions.

The Team

The Center is successful thanks to a team of professionals who ensure the estate and programs are running at a high level. The pandemic, and subsequent lack of in-person meetings, meant that the office staff worked remotely for half of the year. We were sad to lose Michelle Corbeaux, who moved to Columbia University after expertly managing the Center’s finances, co-managing the Corporate Sponsor Program, and supporting travel for thousands of meeting participants during

her six years at Banbury. In the autumn the Center expanded rapidly, welcoming three new team members: Duncan Yates as Lodging Manager, Vanessa Franco as Finance and Development Coordinator, and Hannah Stewart as Communications and Special Projects Coordinator.

Despite the lack of meetings, housekeepers Miriam, Maria, Emma, and Terry, supervised by Claudia Schmid and Patricia McAdams, ensured our offices were kept clean and disinfected. Jose Peña-Corvera, Paulo Krizanovski, and Juan Colocho skillfully maintained 55 acres of impeccable grounds, keeping the estate beautiful and accessible throughout the entire pandemic. As always, we are grateful to the entire Facilities team who led the Sammis Hall renovations and kept us up-to-date on health and safety protocols.



Rebecca Leshan, Ph.D.
Executive Director

2021 Publications Resulting from Banbury Meetings

- Ge EJ, Bush AI, Casini A, Cobine PA, Cross JR, DeNicola GM, Dou QP, Franz KJ, Gohil VM, Gupta S, et al. 2021. Connecting copper and cancer: from transition metal signalling to metalloplasia. *Nat Rev Cancer* **22**: 102–113. doi:10.1038/s41568-021-00417-2
- Mohr DC, Azocar F, Bertagnolli A, Choudhury T, Chrisp P, Frank R, Harbin H, Histon T, Kaysen D, Nebeker C, et al., on behalf of the Banbury Forum on Digital Mental Health. 2021. Banbury Forum consensus statement on the path forward for digital mental health treatment. *Psychiatr Serv* **72**: 677–683. doi:10.1176/appi.ps.202000561
- Wang YC, Brondolo E, Monane R, Kiernan M, Davidson KW, MAVEN Leadership Team. 2021. Introducing the MAVEN Leadership Training Initiative to diversify the scientific workforce. *eLife* **10**: e69063. doi:10.7554/eLife.69063

BANBURY CENTER MEETINGS

<i>Dates</i>	<i>Title</i>	<i>Organizer(s)</i>
January 14, 19	Environmental Consequences of Deep-sea Mining, a Comparison with Land-based Mining: Virtual Pre-meeting II	A. Metaxas, V. Tunnicliffe
February 8–10	Environmental Consequences of Deep-sea Mining, a Comparison with Land-based Mining: Virtual Pre-meeting III	A. Metaxas, V. Tunnicliffe
April 22	CSH Technology and Education Council (Virtual)	R. Leshan
December 6, 9	Making Career-spanning Learning in the Life Sciences Inclusive and Effective for All: Virtual Kickoff	R. Tractenberg, J. Williams

BANBURY CENTER MEETINGS

Environmental Consequences of Deep-sea Mining, a Comparison with Land-based Mining: Virtual Session II

January 14, 19

ARRANGED BY A. Metaxas, Dalhousie University, Halifax, Nova Scotia, Canada
V. Tunncliffe, University of Victoria, British Columbia, Canada

FUNDED BY Cold Spring Harbor Laboratory Corporate Sponsor Program

The presence of metalliferous ores on the seabed is fueling speculation of greater access to metal supplies to support current and projected global demands. As international authorities finalize the regulations to enable exploitation, questions concerning the environmental consequences must be addressed despite large knowledge gaps. The challenge is to assess the risks in the context of alternative metal supplies. Building on virtual work in 2020, this second virtual workshop convened land-based mining experts to provide background on deep-sea mining, explore environmental effects of land-based mining, and suggest approaches to limit the scope for comparisons.



DAY ONE

Overview of deep-sea mining
Review of Virtual Pre-meeting I outcomes
Approaches to comparing environmental impacts of
deep-sea and land-based mining

DAY TWO

Variability of land-based mining
Refining objectives for next meeting

PARTICIPANTS

C.D. ('Lyn) Anglin, Anglin & Associates, North Vancouver, Canada	A.S. Maest, Buka Environmental, Boulder, Colorado
M. Breitburg-Smith, RESOLVE, Washington, D.C.	A. Metaxas, Dalhousie University, Halifax, Nova Scotia, Canada
B. Butler, U.S. Environmental Protection Agency/ORD, Cincinnati, Ohio	G. Mudd, RMIT University, Melbourne, Victoria, Australia
A. Cross, Centre for Mine Site, Perth, Western Australia, Australia	L.E. Sánchez, University of São Paulo, São Paulo, Brazil
P. De Morgan, RESOLVE, Logan, Utah	L. Sonter, University of Queensland, Brisbane, Queensland, Australia
P. Erskine, University of Queensland, Brisbane, Queensland, Australia	J.F.H. Thompson, PetraScience Consultants, Vancouver, British Columbia, Canada
L.E. Fernández, Wake Forest University, Winston-Salem, North Carolina	V. Tunncliffe, University of Victoria, British Columbia, Canada
	S. Wheston, Tembusu Limited, Cashel, Ireland

Environmental Consequences of Deep-sea Mining, a Comparison with Land-based Mining: Virtual Session III

February 8–10

ARRANGED BY A. Metaxas, Dalhousie University, Halifax, Nova Scotia, Canada
V. Tunncliffe, University of Victoria, British Columbia, Canada

FUNDED BY Cold Spring Harbor Laboratory Corporate Sponsor Program

The presence of metalliferous ores on the seabed is fueling speculation of greater access to metal supplies to support current and projected global demands. As international authorities finalize the regulations to enable exploitation, questions concerning the environmental consequences must be addressed despite large knowledge gaps. The challenge is to assess the risks in the context of alternative metal supplies. Our third virtual workshop convened the full group of land-based mining and deep-sea experts to consider the supposition that the environmental trade-off between deep-sea and terrestrial extraction favors opening this new ocean frontier.

DAY ONE

Opening Remarks: M. Breitburg-Smith, RESOLVE, Washington, D.C.

R. Leshan, Banbury Center, Cold Spring Harbor Laboratory, New York

A. Metaxas, Dalhousie University, Halifax, Nova Scotia, Canada

V. Tunncliffe, University of Victoria, British Columbia, Canada

V. Tunncliffe, University of Victoria, British Columbia, Canada: Pre-meeting outcomes

A. Metaxas, Dalhousie University, Halifax, Nova Scotia, Canada: The purpose of comparing environmental impacts of deep-sea mining with land-based mining

John Thompson, PetraScience Consultants, Vancouver, British Columbia, Canada: Comparing deep-sea mining and land-based mining

Group Discussion

DAY TWO

Group Discussion: Land-based mining scenarios

C. Smith, University of Hawaii at Mānoa, Honolulu, Hawaii (presenter); D. Amon, Natural History Museum, London, United Kingdom: Nodule Mining I

S. Smith, Blue Globe Solutions, Toronto, Ontario, Canada: Nodule Mining II

Group Discussion: Deep-sea mining scenarios

Group Discussion: Challenges and opportunities

DAY THREE

Breakout Groups: Comparing deep-sea mining and land-based mining

Breakout Group Reporting

Group Discussion

PARTICIPANTS

D.J. Amon, Natural History Museum, London, United Kingdom

C.D. ('Lyn) Anglin, Anglin & Associates, North Vancouver, Canada

M. Breitburg-Smith, RESOLVE, Washington, D.C.

B. Butler, U.S. Environmental Protection Agency/ORD, Cincinnati, Ohio

A. Cross, Centre for Mine Site, Perth, Western Australia, Australia

P. De Morgan, RESOLVE, Logan, Utah

P. Erskine, University of Queensland, Brisbane, Queensland, Australia

L.E. Fernández, Wake Forest University, Winston-Salem, North Carolina

T. Koslow, Scripps Institution of Oceanography, Sandford, Tasmania, Australia

J. Le, Silver Spring, Maryland

L. Levin, Scripps Institution of Oceanography, University of California, San Diego, La Jolla

H. Lily, London, United Kingdom

A.S. Maest, Buka Environmental, Boulder, Colorado

N. Mestre, CIMA, Universidade do Algarve, Faro, Portugal

A. Metaxas, Dalhousie University, Halifax, Nova Scotia, Canada

G. Mudd, RMIT University, Melbourne, Victoria, Australia

E. Ramirez-Llodra, REV Ocean, Oslo, Norway

L.E. Sánchez, University of São Paulo, São Paulo, Brazil

R. Sharma, National Institute of Oceanography, Goa, India

C. Smith, University of Hawaii at Mānoa, Honolulu, Hawaii

S. Smith, Blue Globe Solutions, Toronto, Ontario, Canada

L. Sonter, University of Queensland, Brisbane, Queensland, Australia

J.F.H. Thompson, PetraScience Consultants, Vancouver, British Columbia, Canada

V. Tunnicliffe, University of Victoria, British Columbia, Canada

A. Vanreusel, Ghent University, Belgium

P. Weaver, Seascope Consultants, Ltd., United Kingdom

S. Whetton, Tembusu Limited, Cashel, Ireland

CSHL Technology and Education Council (Virtual)

April 22

ARRANGED BY **R. Leshan**, Cold Spring Harbor Laboratory, New York

FUNDED BY **Cold Spring Harbor Laboratory Corporate Sponsor Program**

Cold Spring Harbor Laboratory's Technology and Education Council (TEC) is an advisory group composed of senior scientists from the pharmaceutical and biotechnology industries. This meeting convened members of TEC as well as global experts and thought leaders for high-level, interdisciplinary engagement around the challenges and opportunities in precision medicine. In addition to open discussions of new opportunities and strategies, the meeting identified topics for future Banbury meetings.

Welcoming Remarks: **R. Leshan**, Cold Spring Harbor Laboratory, New York
D. Stewart, Cold Spring Harbor Laboratory, New York
B. Stillman, Cold Spring Harbor Laboratory, New York

SESSION 1: Diversity in Testing and Clinical Trials

Chairperson: **R. Leshan**, Cold Spring Harbor Laboratory, New York

SESSION 3: Challenges of Data

Chair: **A. Whiteley**, Cold Spring Harbor Laboratory, New York

SESSION 2: Emerging (Indirect) Impacts of COVID-19

Chairperson: **D. Stewart**, Cold Spring Harbor Laboratory, New York

SESSION 4: Flash Topics

Chair: **R. Leshan**, Cold Spring Harbor Laboratory, New York

PARTICIPANTS

L. Brizuela, Agilent Technologies, Santa Clara, California
C. Donaldson, Cold Spring Harbor Laboratory, New York
T. Evans, New England BioLabs, Inc., Ipswich, Massachusetts
M. Gurtowski, Cold Spring Harbor Laboratory, New York
J. Herman, Northwell Health, New Hyde Park, New York
S. Korn, Merck Research Laboratories, Kenilworth, New Jersey
R. Leshan, Cold Spring Harbor Laboratory, New York

D. Rocco, Biogen, Cambridge, Massachusetts
A. Sachs, Thermo Fisher Scientific, San Francisco Bay Area, California
C. Saliou, The Estée Lauder Companies, New York, New York
A. Sireci, Loxo Oncology at Lilly, New York
D. Stewart, Cold Spring Harbor Laboratory, New York
B. Stillman, Cold Spring Harbor Laboratory, New York
A. Whiteley, Cold Spring Harbor Laboratory, New York

Making Career-spanning Learning in the Life Sciences Inclusive and Effective for All: Virtual Kickoff

December 6, 9

ARRANGED BY

R. Tractenberg, Georgetown University, Washington, D.C.
J. Williams, Cold Spring Harbor Laboratory, New York

ORGANIZING COMMITTEE

B. Batut, University of Freiburg, Germany
S. Donovan, BioQUEST Curriculum Consortium
K.L. Jordan, The Carpentries, Oakland, California
T. Mourad, Ecological Society of America, Washington, D.C.
T. Teal, RStudio, Boston, Massachusetts
C. van Gelder, Dutch Techcentre for Life Sciences, Utrecht, The Netherlands

FUNDED BY

Cold Spring Harbor Laboratory Corporate Sponsor Program

Continual advances in life sciences methods and technologies have made it unrealistic to rely solely on university degrees for up-to-date training. Short-format training (SFT) has emerged to fill this gap, providing focused learning opportunities with the agility to adapt to the latest scientific developments. Studies of SFT have warned of challenges for the format, including potential disparities in accessibility for marginalized groups. A planned 2022 Banbury meeting will bring together experts on training, education, and life science research to explore challenges, foster a community motivated to improve, and develop a blueprint for a more inclusive and effective future of SFT. This virtual kickoff meeting convened the expert group to review objectives for the 2022 in-person meeting and to begin to tackle current challenges faced by SFT.

PARTICIPANTS

B. Batut, University of Freiburg, Germany
E. Becker, The Carpentries, Oakland, California
A. Brown, Virginia Tech, Blacksburg
M. Burke, Australian BioCommons/QCIF and RCC at the University of Queensland, Brisbane, Australia
B. Busby, DNAnexus
A. Clyburne-Sherin, Reproducibility for Everyone
A. Dillman, National Institutes of Health (NIH), Bethesda, Maryland
S. Donovan, BioQUEST Curriculum Consortium
N. Faya, Genomics Aotearoa, Dunedin, New Zealand
J. Guo, University of Arizona, Tucson
C. Hall, Australian BioCommons, The University of Melbourne, Parkville, Victoria, Australia
K. Hertweck, Chan Zuckerberg Initiative, Redwood City, California
K. Jordan, The Carpentries, Oakland, California
J.R. Jungck, University of Delaware, Newark
C. Lambert, Cold Spring Harbor Laboratory, New York
A. Latour, IDEA-STEM
J. Lindvall, ELIXIR-SE, Uppsala, Sweden
M. Lloret Llinares, European Molecular Biology Laboratory–European Bioinformatics Institute, Cambridge, United Kingdom
R. Morris, National Center for Biotechnology Information, NLM, NIH, Bethesda, Maryland
T. Mourad, Ecological Society of America, Washington, D.C.
A. Nisselle, Melbourne Genomics, The University of Melbourne, Parkville, Victoria, Australia
P. Ordóñez, University of Puerto Rico, Río Piedras
L. Paladin, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
P. Palagi, SIB Swiss Institute of Bioinformatics, Lausanne
M. Sukhai, Canadian National Institute for the Blind, Toronto, Ontario, Canada
T. Teal, RStudio, Boston, Massachusetts
R. Tractenberg, Georgetown University, Washington, D.C.
C. van Gelder, Dutch Techcentre for Life Sciences, Utrecht, The Netherlands
J. Williams, Cold Spring Harbor Laboratory DNA Learning Center, New York
L. Woodley, Community Initiatives/CSCCE, Oakland, California
H. Ye, University of Florida, Gainesville