Phytomining

Virtual workshop – DAY 2

June 1st, 2023

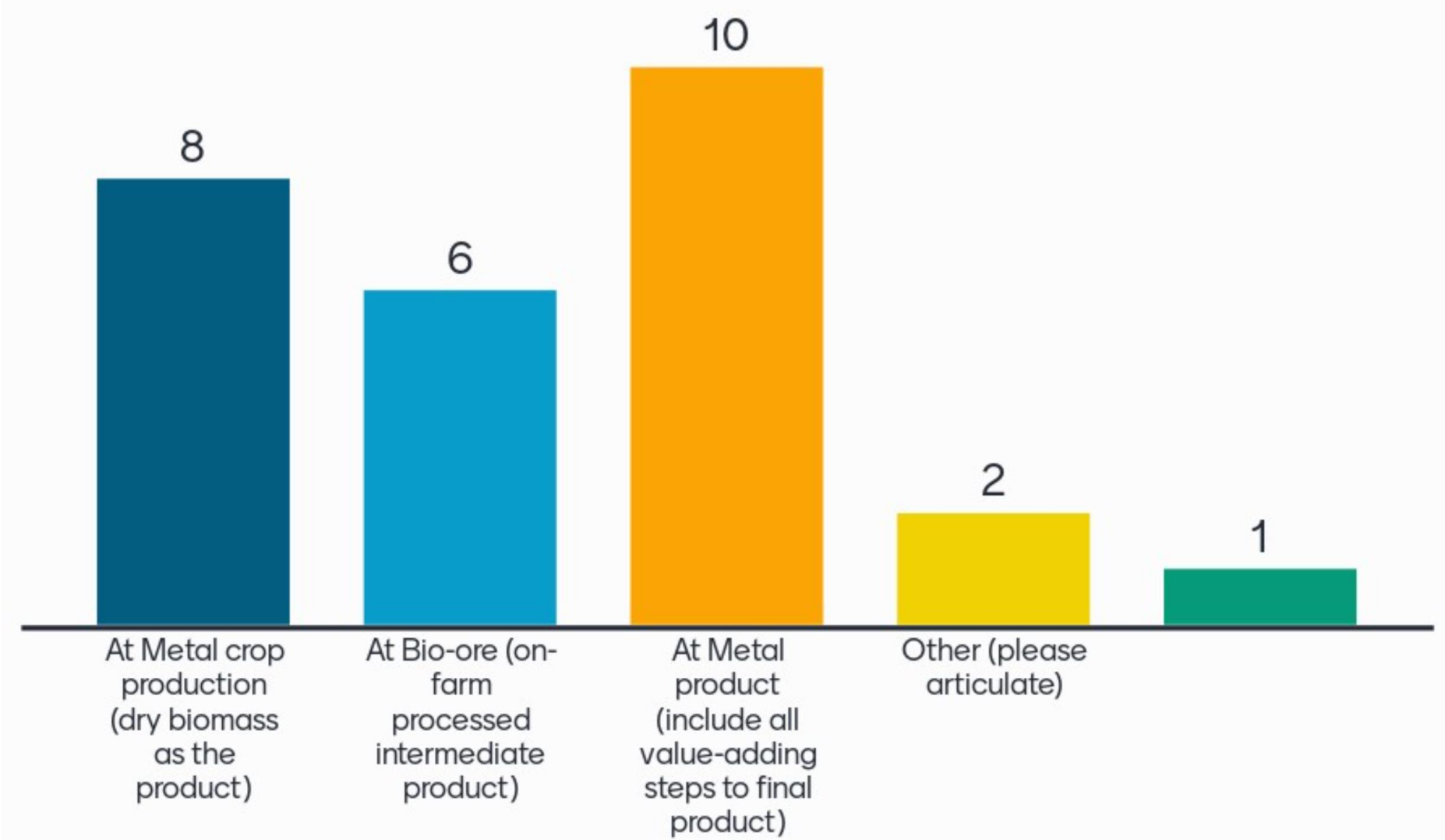
Please request a follow up meeting by sending e-mail to Dr. Philseok Kim (phil.kim@hq.doe.gov)

Share any post-workshop thoughts by e-mail even if you don't plan to request an immediate follow up meeting.

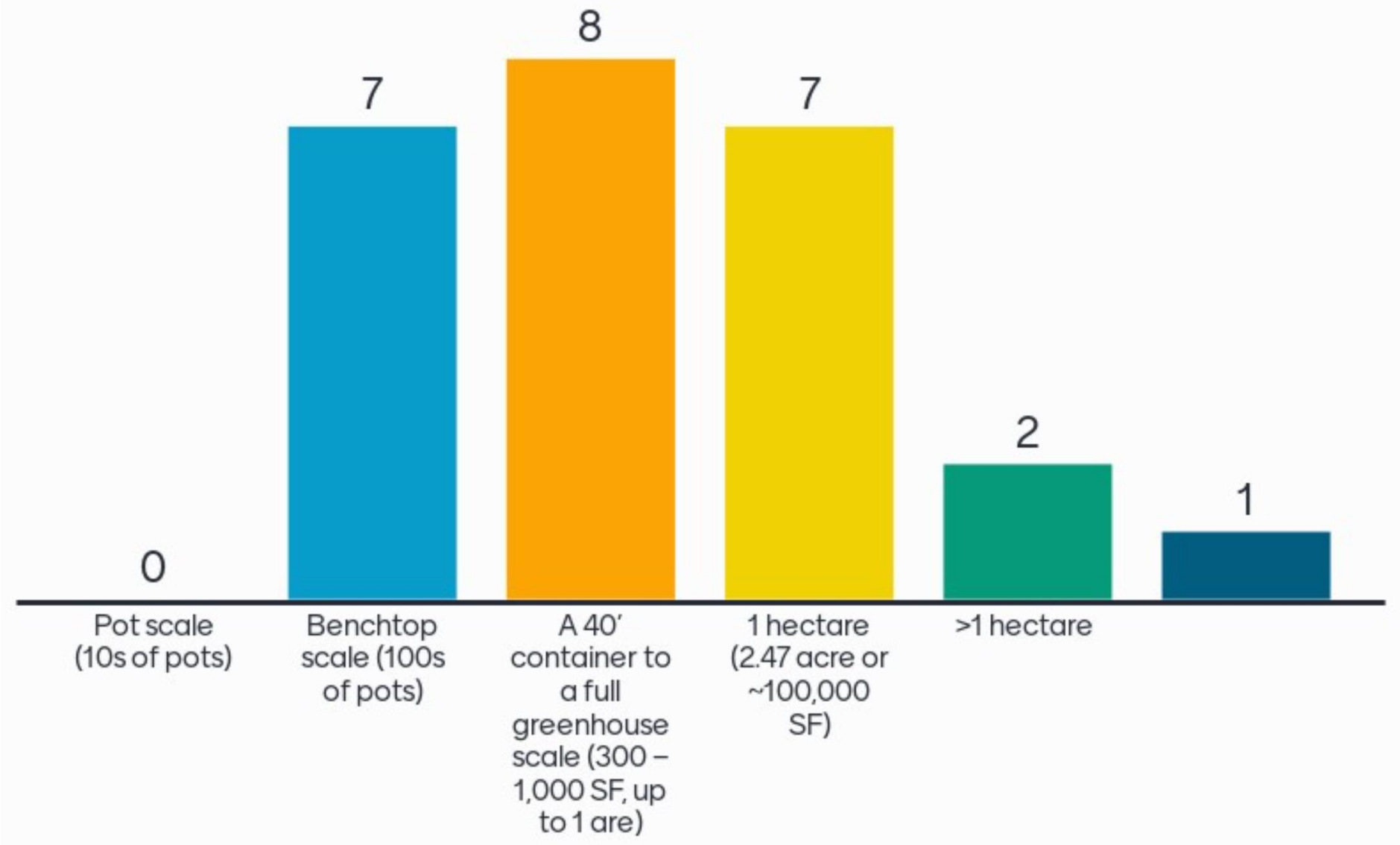
AGENDA - DAY 2 (JUNE 1st)

Time (EST)	Description
1:00 – 1:15 PM	**Readout from Breakout 1** *Dr. Philseok Kim, ARPA-E Program Director*
1:15 – 2:00 PM	**Invited Talk: Agromining – A European Perspective** *Dr. Antony van der Ent (Econick and Botanickel)*
2:00 – 2:50 PM	**Breakout 2a: Hyperaccumulators – Agronomy, Biology, Soil Science (from seed to metal crops)**
2:50 – 3:00 PM	**Break**
3: 00 – 4:00 PM	**Breakout 2b: Hyperaccumulators – Agronomy, Biology, Soil Science (continued)**

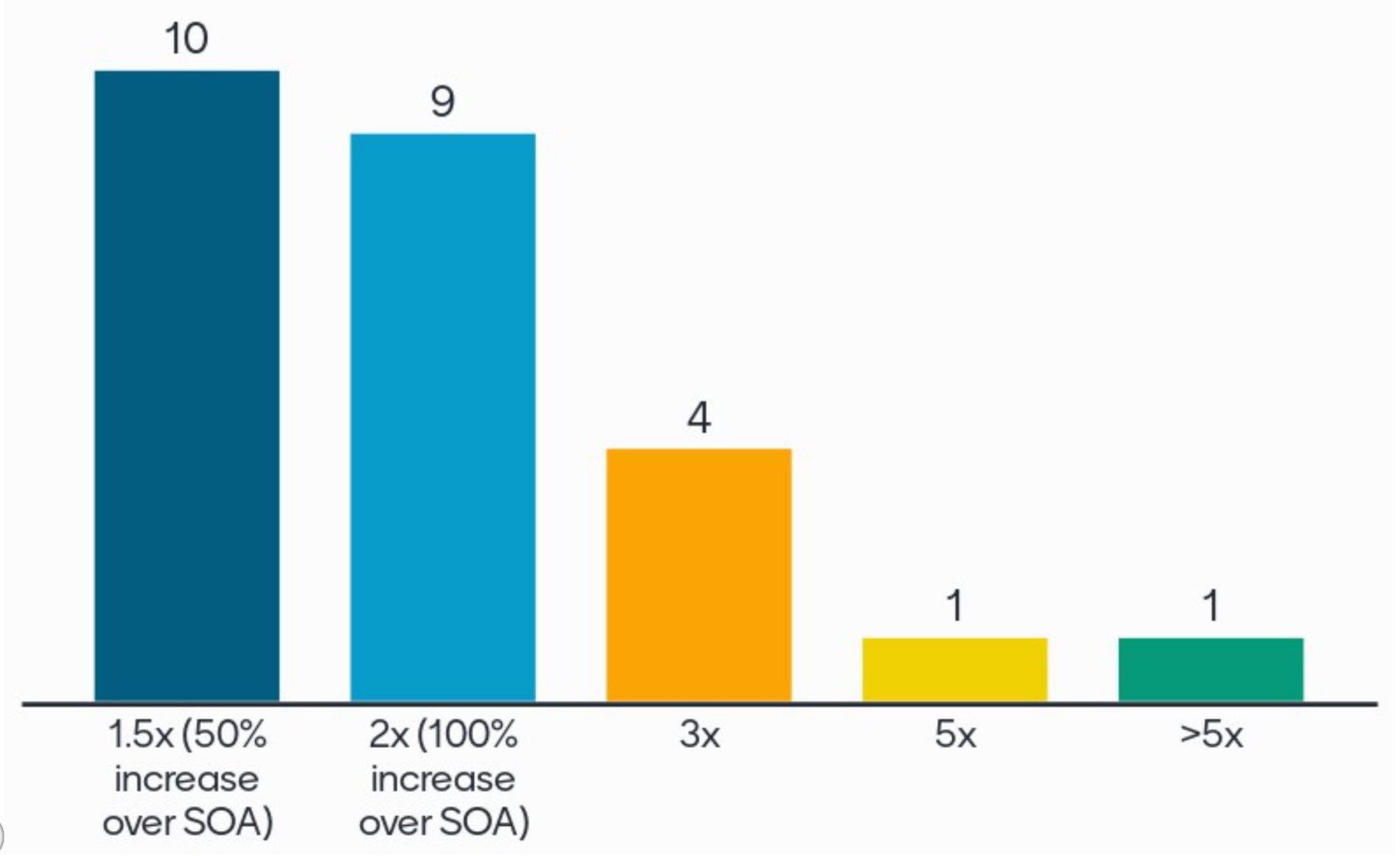
Q1. Where should a potential ARPA-E phytomining program (2-3 year) draw its boundaries?



Q2. What would be a reasonable scale of upstream deliverables for a potential ARPA-E phytomining program (2-3 year)?



Q3. What would be a reasonable target overall yield improvement for a potential ARPA-E phytomining program (2-3 year)?



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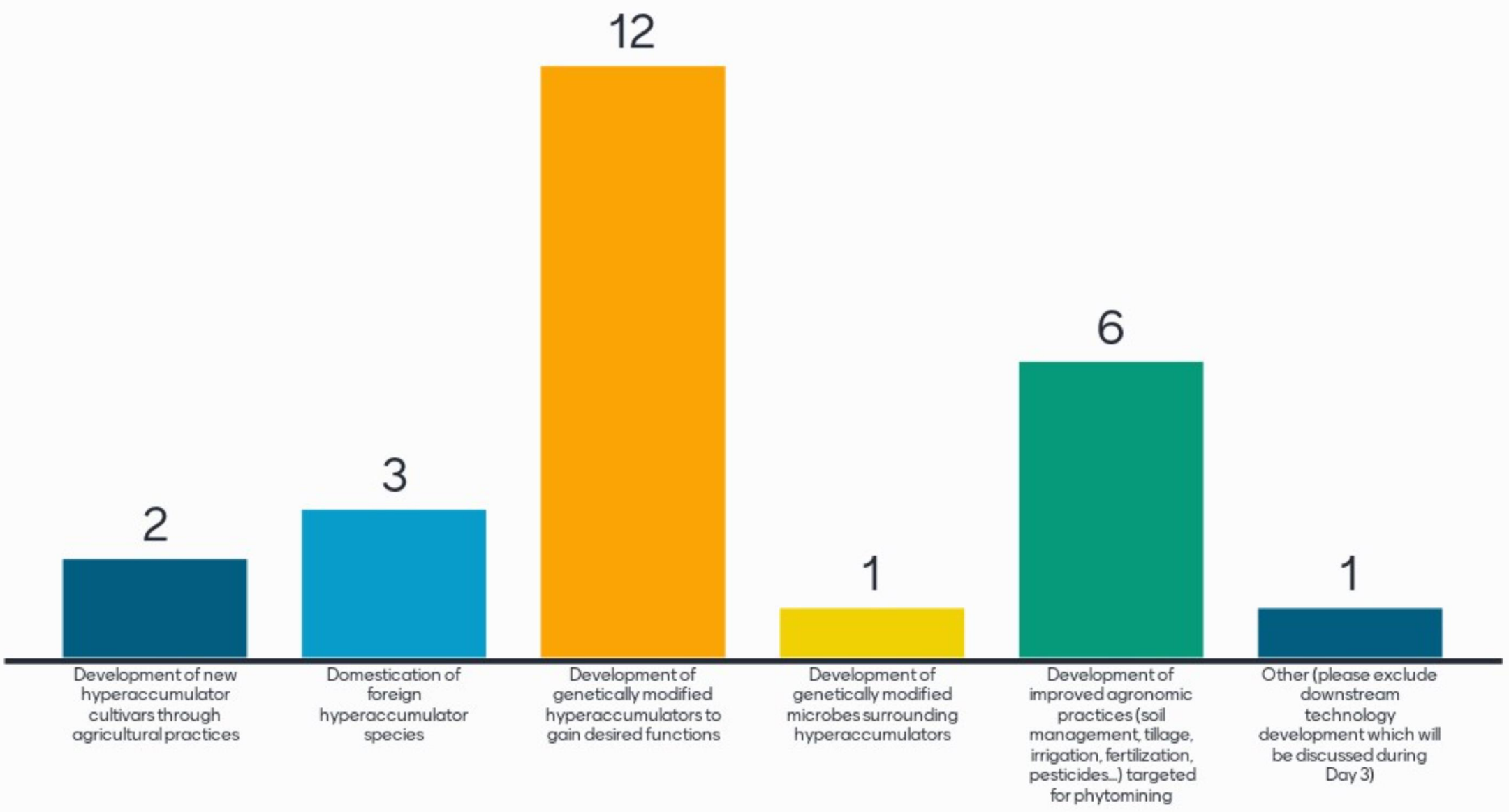
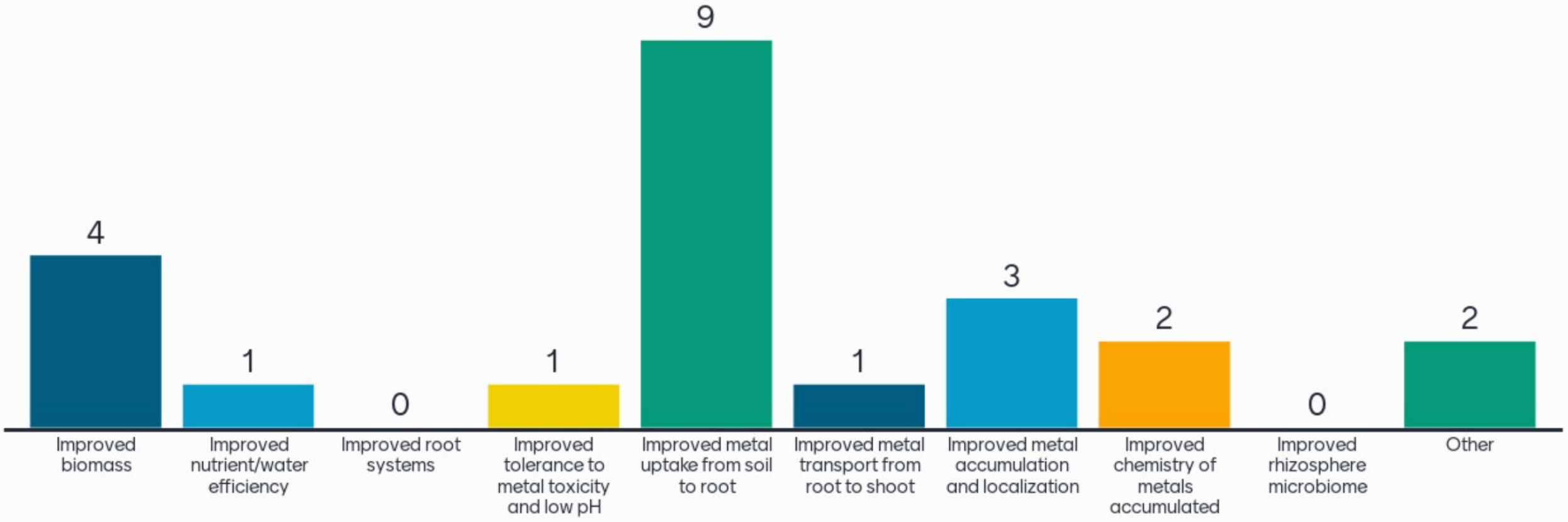
Q4. What should ARPA-E phytomining program (2-3 years) focus for the upstream phytomining technology development?



Q5. Top most important traits and mechanisms to increase the metal yields from phytomining?



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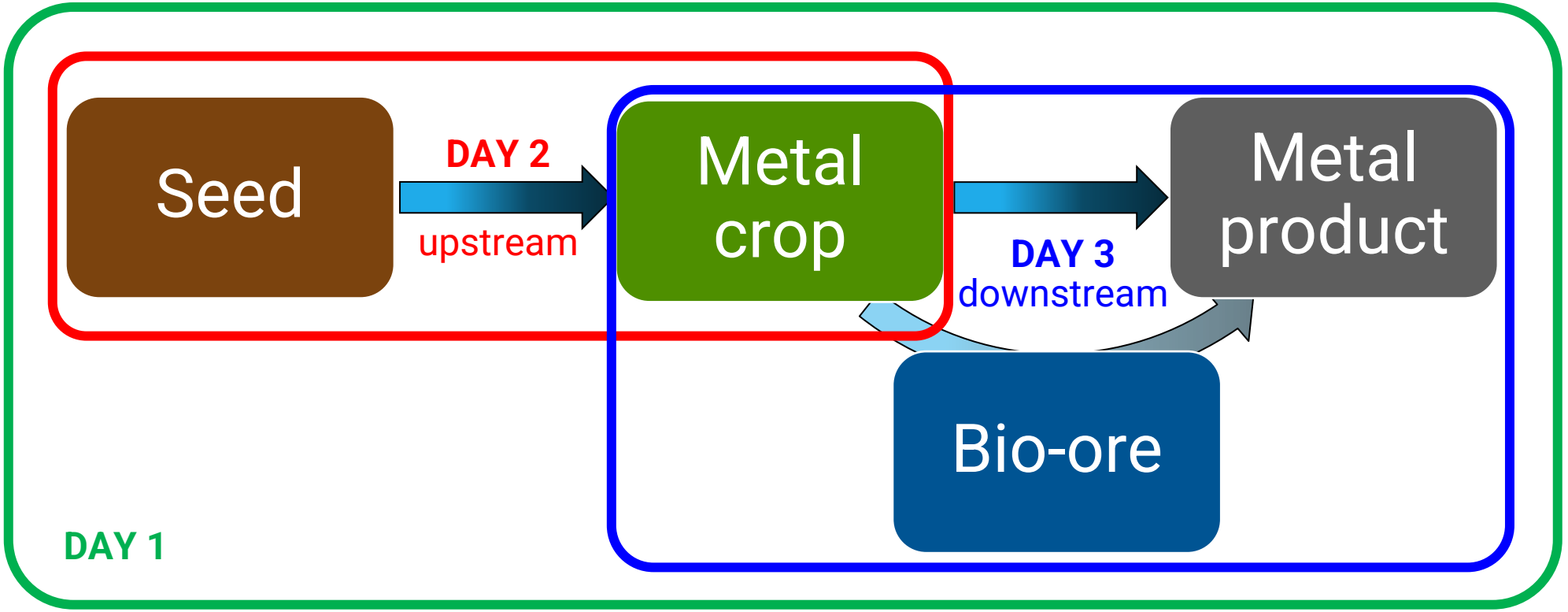
3 Day-Virtual Workshop & Breakout Discussions

- DAY 1 (5/30): Phytomining, General Topic
- DAY 2 (6/01): Hyperaccumulators – Agronomy, Biology, and Soil Science
- DAY 3 (6/14): Biomass processing & Metal extraction/separation



Invited speakers

DAY 1

Dr. Rufus Chaney (ret. USDA)

Cited by		VIEW ALL
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Citations	42860	10414
h-index	110	52
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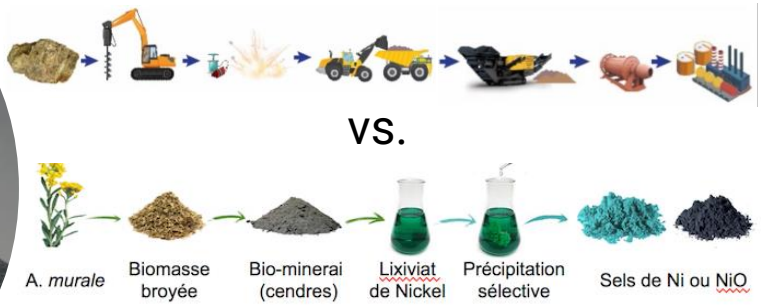
History of U.S. Phytomining

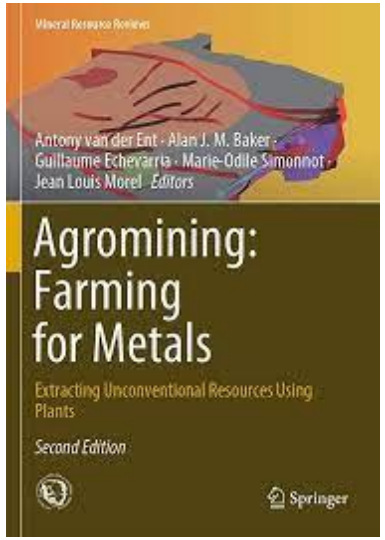
Prof. Victor Vasquez (Univ. Nevada, Reno)



TEA/LCA

Dr. Antony van der Ent (Econick/Botanickel)

Hyperacummulators
Agromining in Europe



DAY 2

Prof. Marie-Odile Simonnot (Univ. Lorraine, Nancy)

Metal separations

DAY 3

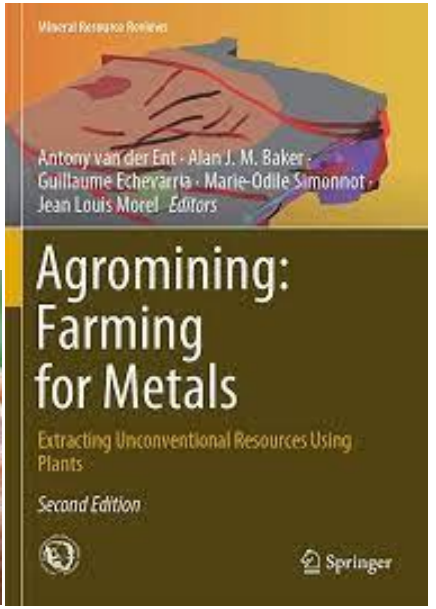
Audience Participation During Presentations

- Enter questions in the chat
- The Facilitator will ask questions posed in the chat, time permitting
- Speakers can respond to unanswered chat questions after their talk

DAY 2

Hyperacummulators Agromining in Europe

Dr. Antony van der Ent (Econick/Botanickel)



Dr. Antony van der Ent is a plant ecophysiologist and biogeochemist who studies the biopathways of trace elements in soil and plant systems. His research bridges systematics, ecology and physiology of plants and is highly collaborative in nature. In his research he uses cutting-edge synchrotron and microprobe techniques to probe the distribution and coordination chemistry of plants. He aims to support the development of novel phytotechnologies that make use of the unique properties of hyperaccumulator plants, including phytoremediation, agromining and biofortification. He has been involved with the agromining start-up Econick, and more recently Botanickel, since its inception.
He completed his PhD in 2014 and has since worked at the University of Queensland in Australia and the University of Lorraine in France and is now based at Wageningen University in the Netherlands.

DAY 2 Breakout Session is starting…

- **You will be automatically placed in a different virtual room in a moment**
- **There will be a discussion facilitator and a notetaker in each group**
- **Engage** actively during B/O sessions (your opinions matter!)
- **Network** with the participants and look for potential partners
- **Request** follow up meetings with ARPA-E (phil.kim@hq.doe.gov)
- ARPA-E is NOT looking for reaching a consensus during the workshop
- ARPA-E wants to gather inputs and opinions from all of you

You may not cross the boundaries set by the laws of physics!
However, erase the 'box' around your usual thinking!
Have fun!

- Email to request registration for **Day 3 Breakouts**: Kalena.Stovall@hq.doe.gov

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