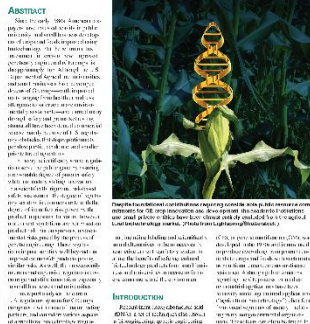


Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities



CAST Issue Paper 59

Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities

Chair: Alan McHughen, University of California–Riverside; 11-member task force

Release/Rollout

On March 22, Dr. Alan McHughen, the task force chair, presented key findings to an audience at The Association of Public and Land-grant Universities; this was followed by a reception. On March 23, Dr. McHughen conducted briefings for Senate staffers in the morning and for House staffers at a noon lunch seminar.

Approximately 70 attended these three briefings.

In-kind Contributions: 285 volunteer hours; \$21,090 monetary value

Press Release (results two weeks after release)

- Press release went to 8,963 e-contacts (3,434 media) resulting in 5,078 opens/interactions
- 171,529 headline impressions, and 159 total pickups on [press release through PRWeb](#).
- A sampling of sites where the release was picked up: AGree, AgDaily, AgriMarketing, APAC Newswire, Benzinga, IT Business Net, NC Agribusiness Council, One News Page, Oklahoma Farm Report, PortalTaxi.net News, SeedQuest, Southern Crop Production Association, SpaceGab, and UC Davis Department of Plant Sciences Blog

Follow-On Activities

- Video of Dr. McHughen's presentation and slides posted on CAST website and YouTube. [Click here to view](#). (246 views as of March 20, 2020)
- An author mentioned the publication as a resource on current global regulatory policy when he was on a panel at a program at UC Berkeley in May 2018 (<https://pges.berkeley.edu/>). He also made the publication available to the American Seed Trade Association.
- A reviewer "heard that several persons referenced the report in their comments made to U.S. regulatory agencies as these agencies are reviewing their regulations."
- An author said the dean of her college has used this publication to advertise their faculty.

Paper Distribution

- Paper Downloads 2 years after release: 6,538
- Distributed approximately 400 copies of printed issue paper

This report last updated March 22, 2020.

Indirect Paper Distribution

CAB Direct

<https://www.cabdirect.org/cabdirect/abstract/20183160620>

Dokumen

<https://dokumen.tips/documents/issue-paper-march-2018-number-59-cast-of-agriculture-rdna-a-set-of-techniques.html>

EBSCO

ZDoc – Weed Science Society of America

<https://zdoc.site/issue-paper-weed-science-society-of-america.html>

Articles and Web Mentions

AgriPulse, *Washington Week Ahead*, Philip Brasher, March 23, 2018

<https://www.agri-pulse.com/articles/10739-washington-week-ahead-budget-talks-199a-fix-go-down-to-wire>

AgriPulse, *Scientists say regulation stifles many new biotech traits*, March 28, 2018

<https://www.agri-pulse.com/articles/10764-scientists-say-regulation-stifles-many-new-biotech-traits>

AgriPulse Newsletter, *Scientists say regulation stifles many new biotech traits*, (Volume 14 Number 13, pp 9&10), Sara Wyant, March 28, 2018

<https://www.agri-pulse.com/ext/resources/Archives-Newsletters/03282018.pdf?1522235944>

BIotechNOW, *What's Happening on National Ag Day*, Connor McKoy, March 23, 2018

<http://www.biotech-now.org/food-and-agriculture/2018/03/whats-happening-on-national-ag-day>

Bovine Veterinarian, *CAST: Excessive Barriers Stifle Biotech Progress*, John Maday, March 22, 2018

<https://www.bovinevetonline.com/article/cast-excessive-barriers-stifle-biotech-progress>

CAST News, March 9, 2018

http://www.cast-science.org/news/?biotech_regulations_publication&show=news&newsID=23527

Doc's Blog posted March 28, 2018 with link to the paper

<https://www.vacaresources.com/index.php/doc-s-blog>

Drovers, *CAST: Excessive Barriers Stifle Biotech Progress*, John Maday, March 22, 2018

<https://www.drovers.com/article/cast-excessive-barriers-stifle-biotech-progress>

Euro Biotechnology *What's Happening on National Ag Day*, April 10, 2018

<http://eurobiotechnology.com/whats-happening-on-national-ag-day/>

Farm Journal's AgPro, *CAST: Excessive Barriers Stifle Biotech Progress*, John Maday, March 22, 2018

<https://www.agprofessional.com/article/cast-excessive-barriers-stifle-biotech-progress>

Farm Journal's Pork, *CAST: Excessive Barriers Stifle Biotech Progress*, John Maday, March 22, 2018

<https://www.porkbusiness.com/article/cast-excessive-barriers-stifle-biotech-progress>

This report last updated March 22, 2020.

Genetic Literacy Project, *Regulations based on 'spurious, undocumented risks' keeping GMO and gene-edited foods from consumers*, report says, John Maday, Drovers, March 26, 2018

<https://geneticliteracyproject.org/2018/03/26/regulations-based-on-spurious-undocummented-risks-keeping-gmo-and-gene-edited-foods-from-consumers-report-says/>

Hortidaily, *US: Regulatory barriers to biotechnology development*, March 22, 2018

<http://www.hortidaily.com/article/41551/US-Regulatory-barriers-to-biotechnology-development>

International Service For Acquisition of Agri-Biotech Applications, *Crop Biotech Update Newsletter, CAST Issue Paper Discusses Regulatory Barriers to AgBiotech*, April 4, 2018

<http://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=16298>

NAMA e-News, March 23, 2018

<http://www.namablog.org/?p=13069>

National Ag Day, March 27, 2018

<https://www.agday.org/dc-events>

National Coalition for Food and Agricultural Research, April 10, 2018

https://www.ncfar.org/HSS_20180323_Media_Release.pdf

National Coalition for Food and Agricultural Research Seminar Announcement, April 10, 2018

https://www.ncfar.org/Hill_Seminar_Series_2018.asp

Progressive Farmer, *Biotech BURDENS*, Gregg Hilyer

[http://dtnpf-](http://dtnpf-digital.com/publication/?i=525847&article_id=3187360&view=articleBrowser&ver=html5#{%22issue_id%22:525847,%22view%22:%22articleBrowser%22,%22article_id%22:%223187360%22})

[digital.com/publication/?i=525847&article_id=3187360&view=articleBrowser&ver=html5#{%22issue_id%22:525847,%22view%22:%22articleBrowser%22,%22article_id%22:%223187360%22}](http://dtnpf-digital.com/publication/?i=525847&article_id=3187360&view=articleBrowser&ver=html5#{%22issue_id%22:525847,%22view%22:%22articleBrowser%22,%22article_id%22:%223187360%22})

Seed Biotechnology Center, April 10, 2018

<http://sbc.ucdavis.edu/>

The World Seeds, *Regulations, Applications, Acceptance*, March 26, 2018

<http://news.theworldseeds.com/index.php?p=5980>

Citations

AgEcon Search, *Research in Agricultural and Applied Economics, Canadian Consumer Acceptance of Gene-Edited Versus Genetically Modified Potatoes: A Choice Experiment Approach*, Muringai, Violet ; Fan, Xiaoli ; Goddard, Ellen, September 2019.

<https://ageconsearch.umn.edu/record/294164/>

Comparative Analysis of Risk Assessment Procedures for Genetically Modified Crops in the European Union and United States, Indah Nuryanti, Wageningen University & Research.

<http://edepot.wur.nl/498745>

Externwebben—SLU, March 23, 2018

<https://www.slu.se/en/cv/dennis-eriksson/>

Frontiers in Plant Science, Volume 9, September 19, 2018, Qianqian Shao, Maarten Punt and Justus Wesseler
New Plant Breeding Techniques Under Food Security Pressure and Lobbying

This report last updated March 22, 2020.

<https://www.frontiersin.org/articles/10.3389/fpls.2018.01324/full>

Also referenced on U.S. National Center for Biotechnology Information and U.S. National Library of Medicine

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6156281/>

Regulation of Genome Editing in Plant Biotechnology: A Comparative Analysis of Regulatory Frameworks of Selected Countries and the EU, Editors: Dederer, Hans-Georg, Hamburger, David, Springer International Publishing, 2019.

https://books.google.com/books?id=a9CpDwAAQBAJ&pg=PA308&lpg=PA308&dq=Regulatory+Barriers+to+the+Development+of+Innovative+Agricultural+Biotechnology+by+Small+Businesses+and+Universities&source=bl&ots=18I29tGiT8&sig=ACfU3U3K7tlpM2_jle4zkXa_YfmI1xb2nw&hl=en&sa=X&ved=2ahUKewiQ2pfOiP7kAhVVvJ4KHRmjDa04ChDoATAAegQICRAB#v=onepage&q=Regulatory%20Barriers%20to%20the%20Development%20of%20Innovative%20Agricultural%20Biotechnology%20by%20Small%20Businesses%20and%20Universities&f=false

Social Media

Twitter –

[@CASTagScience]: CAST Invites You to a Panel Discussion on "Regulatory Barriers to the Development of Inno...

(3/6/2018) *Retweeted by 3 people and liked by 1*

[@CASTagScience]: CAST Invites You to a Panel Discussion on "Regulatory Barriers to the Development of Inn...

(3/9/2018) *Retweeted by 1 additional person and liked by 4*

[@CASTagScience]: We are gearing up for the release of our latest issue paper and want to invite you to attend the event!

(3/11/2018)

[@Huskerwheat]: Should be interesting. (Shared post above)

(3/11/2018)

[@CASTagScience]: CAST Invites You to a Panel Discussion on "Regulatory Barriers to the Development of Inn...

(3/13/2018) *Retweeted by 2 people*

[@Huskerwheat]: Should be good. Love the image. (Shared the post above)

(3/13/2018)

[@CASTagScience]: CAST is releasing a new issue paper and would like to invite you to attend! Register for the event here:

(3/16/2018) *Retweeted by 1 person and liked by 1*

[@CASTagScience]: Join us on Thursday for the D.C. rollout of CAST's new issue paper about Biotech Regulations.

(3/20/2018) *Retweeted by 1 person*

[@CASTagScience]: CAST Releases New Issue Paper: "Regulatory Barriers to the Development of Innovative Agri...

(3/22/2018) *Retweeted by 3 people and liked by 1*

This report last updated March 22, 2020.

[@CASTagScience]: #CASTCathoftheDay: Check out CAST's recently released paper on "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities". #biotech #Biotechnology #AgTwitter #NationalAgWeek
(3/22/2018)

[@BioscienceBio]: CAST Releases New Issue Paper "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities" – This report examines the current U.S. regulatory system for GE crops compares it with the....
(3/22/2018)

[@cultivision]: CAST Issue paper: Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities
(3/22/2018)

[@IAmBiotech]: Today is CAST Panel Discussion on Regulatory Barriers to the Development of Innovative Agricultural #Biotechnology for National #AgDay
(3/22/2018) *Liked by 1 person*

[@Ron_on_ROM]: CAST Releases Paper on Regulatory Barriers Blocking the Development of Agricultural Innovation
(3/22/2018)

[@henrymiller]: Important new report from CAST: "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities." But barriers won't be removed w/out support from industry, which hasn't been forthcoming for decades:
(3/22/2018) *Retweeted by 4 people and favorited by 9*

[@klausammann]: linked to press release
(3/22/2018)

[@BioBeef]: CAST Releases New Issue Paper: "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities" <http://story.cd/AAIoDL> via @PRWeb
(3/22/2018) *Retweeted by 12 people and favorite by 21*

[@AGreeAgPolicy]: Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Business and Universities -- @CASTagScience #biotech @USDA @US_FDA <http://bit.ly/2FYG9PO>
(3/22/2018)

[@DocCamiRyan]: "This report examines the current U.S. regulatory system for genetically engineered (GE) crops, compares it with those of major trading partners, and considers the effects it has on agricultural biotechnology."
(3/23/2018)

[@KirkMMaxey]: Pushing back against the anti-GMO Troglodytes.
(3/23/2018)

[@EINBiotech]: CAST Releases New Issue Paper: "Regulatory Barriers to the..."
<http://s.einnews.com/R3DPU4wOPM>
(3/22/2018) *Liked by 3 people*

[@B4FA]: CAST releases new issue paper: "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities" <http://story.cd/AAIoDL> via @PRWeb

This report last updated March 22, 2020.

(3/23/2018)

[@luciadesouza]: CAST Releases New Issue Paper: "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities" <http://story.cd/AAIoDL> via @PRWeb
(3/23/2018) *Liked by 4 people*

[@luciadesouza]: RT @TroyOttAg: Regulatory Barriers to the Development of Innovative Agricultural #Biotechnology. #GE #GMO
(3/22/2018)

[@JWMedendorp]: I'm attending A Panel Discussion: Regulatory Barriers to the Development of Innovative Agricultural <http://conta.cc/2G0sLY2> #constantcontact
(3/22/2018)

[@TroyOttAg]: Regulatory Barriers to the Development of Innovative Agricultural #Biotechnology. #GE #GMO
(3/22/2018)

[@prometheusgreen]: CAST Releases New Issue Paper: "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities" <http://story.cd/AAIoDL> via @PRWeb
(3/22/2018) *2 people liked this*

[@UCDavisPlants]: Regulatory barriers to ag. biotech development by small businesses and universities...
(3/26/2018)

[@CASTagScience]: The CAST Issue Paper--Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities--stirred interest on Capitol Hill and in the media.
(3/28/2018) *2 retweets and 4 likes*

[@prakashcs23]: CAST Issue Paper Discusses Regulatory Barriers to AgBiotech
(3/30/2018) *1 person liked this*

[@ServicesCrop]: CAST Issue Paper Discusses Regulatory Barriers to AgBiotech
(3/28/2018) *Liked by 1 person*

[@AmesGoges]: Dr. Van Eenennaam is a noted expert in this field. Also check out CAST's new publication about biotech regulations...
(4/23/2018)

[@CarlosBalanos6]: Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities...
(4/13/2018)

[@CASTagScience]: This CAST report examines the current U.S. regulatory system for GE crops...
(6/12/2018)

Facebook—

[AgBioWorld]: Panel Discussion: Regulatory Barriers to the Development of Innovative Ag Biotech by Small Businesses and Universities free and open to the public. March 22, Washington DC. RSVP needed. Council for Agriculture Panel Science and Technology (CAST) Alan McHughen
(3/6/2018) *shared by 3 additional people*

[CASTagScience]: CAST Invites You to a Panel Discussion on "Regulatory Barriers to the Development of Inno...
(3/6/2018)

This report last updated March 22, 2020.

[Gale Osborne]: CAST coming paper
(3/11/2018)

[CASTagScience]: We are gearing up for the release of our latest issue paper and want to invite you to attend the free event!
(3/11/2018)

[CASTagScience]: CAST Invites You to a Panel Discussion on “Regulatory Barriers to the Development of Innov...
(3/13/2018)

[CASTagScience]: CAST is releasing a new issue paper and would like to invite you to attend! Register for the event here:
(3/16/2018)

[CASTagScience]: CAST Releases New Issue Paper: “Regulatory Barriers to the Development of Innovative Agri...
(3/22/2018)

[CASTagScience]: #CASTCathoftheDay: Check out Council for Agricultural Science and Technology (CAST)’s recently released paper on “Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities”. #biotech #Biotechnology #NationalAgWeek
(3/22/2018)

[Alan McHughen via the Food and Farm Discussion Lab Forum]: New CAST study answers the burning question of “What happened to all those public sector and small company bred GE improved crops for the public good?”
(3/22/2018) *Liked by four people and commented on by 2 people*

[Libertarians for GMOs]: "The scientific community is overwhelmingly positive about biotech plant breeding and the benefits for farmers, consumers, and the environment. But the authors of this paper demonstrate that the current process-based U.S. biotechnology regulatory system is a barrier to such agricultural innovation. The regulatory system needs to be adjusted, or "public, academic, and small business entities will continue to be frustrated in using these safe tools to deliver useful products."
(3/23/2018) *Shared by 2 people and liked by 2*

[GMO SF]: Dr. Alan McHughen, of the University of California, Riverside chaired a committee of university scientists and representatives from small businesses in agricultural biotechnology to provide a position paper describing the barriers to innovation, and the lack of competition to the big agricultural companies, because of the unnecessary costs of commercialization....
(3/23/2018)

[AgBioWorld]: New report on biotech from Council for Agricultural Science and Technology (CAST) - "Unreasonable barriers result in biotech innovation projects that have been slowed down or shelved. Regulations need to align with the stated public policy goal of reasonably assuring safety--in a way that is commensurate with the degree of risk posed...
(3/23/2018)

[Hawaii Crop Improvement Association – HCIA]: US laws and regulations surrounding agricultural biotechnology are extensive, unreasonably expensive, and in need of an update. Many of them were written in the 1980s before the techniques were completely understood...
(3/8/2018) *Favorited by 5 people*

This report last updated March 22, 2020.

[Department of Plant Sciences, UC Davis]: "Regulatory barriers to ag. biotech development by small businesses and universities" co-authored by Kent Bradford.

(3/27/2018) *Liked by 4 people*

[University of California, Davis, Seed Biotechnology Center]: Recent CAST report "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities", co-authored by SBC Director Kent Bradford, examines the current...

(3/26/2018) *Shared by 5 people and liked by 8*

[Farooque Shaikh]: Retweeted Henry Miller, MS, MD (@henryimiller): Important new report from CAST: "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities."...

(3/23/2018)

[Emile Lerebondi]: What's Happening on National Ag Day? Today we celebrate #NationalAgDay. Started in 1973 by the Agriculture Council of America, National Ag Day celebrates the abundance provided by U.S. agriculture...

(3/20/2018)

[Benjamin Edge via Food and Farm Discussion Lab/Extension]: Nice presentation by Alan McHughen at the CAST meeting...

(3/29/2018) *5 likes and 1 comment*

[CAST]: Use this link to get your free copy of CAST's latest issue paper:...

(4/1/2018) *4 likes and 1 share*

[The Council for Biotechnology Information]: A new report from Council for Agricultural Science and Technology (CAST) report examines the current U.S. regulatory system for genetically engineered...

(4/23/2018)

[CAST]: #CASTCathoftheDay: This U.C. Davis geneticists states that current #biotech #regulations are costing researchers and the public. Want to dive deeper into this discussion? Check out CAST's recently released issue paper found here...

(3/24/2018)

Pinterest –

[CAST] to CAST Catch of the Day Board: #CASTCathoftheDay: Check out Council for Agricultural Science and Technology (CAST)'s recently released paper on "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities". #biotech

#Biotechnology #NationalAgWeek

(3/22/2018)

[CAST] to CAST Blogs Board: Agriculture is essential to everyday life! Join CAST in celebrating the individuals who dedicate their lives to feeding the world, the science that supports it, and the nutritious food that results from all of the knowledge and hard work provided. #NationalNutritionMonth

#NationalAgWeek #AgDay

(3/22/2018)

LinkedIn –

[CAST]: We are gearing up for the release of our latest issue paper and want to invite you to attend the free event!

This report last updated March 22, 2020.

(3/11/2018)

[CAST]: CAST is releasing a new issue paper and would like to invite you to attend! Register for the event here:

(3/17/2018)

[CAST]: #CASTCathoftheDay: Check out Council for Agricultural Science and Technology (CAST)'s recently released paper on "Regulatory Barriers to the Development of Innovative Agricultural Biotechnology by Small Businesses and Universities". #biotech #Biotechnology #NationalAgWeek

(3/22/2018)

[Klaus Ammann]: link to the press release

(3/22/2018) 2 likes

[The Council for Biotechnology Information]: A new report from CAST examines the current...

(4/6/2018)

[CAST]: #CASTCathoftheDay: This U.C. Davis geneticists states that current #biotech #regulations are costing researchers and the public. Want to dive deeper into this discussion? Check out CAST's recently released issue paper found here...

(3/24/2018)

Blogger –

Regulatory Barriers Issue Paper—Presentations and Q&A

<https://cast-science.blogspot.com/2018/03/regulatory-barriers-issue-paper.html>

(3/28/2018)

Celebrating Food and the Future of Agriculture

<https://cast-science.blogspot.com/2018/03/celebrating-food-and-future-of.html>

(3/13/2018)