

Spinning Science & Silencing Scientists:

A Case Study in How the Chemical Industry Attempts to Influence Science



Minority Staff Report
Prepared for Members of the
Committee on Science, Space & Technology
U.S. House of Representatives
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Introduction. On February 6, 2018, the Committee on Science, Space, and Technology is scheduled to hold a hearing entitled, *“In Defense of Scientific Integrity: Examining the IARC Monograph Programme and Glyphosate Review.”* The chemical glyphosate is a herbicide most commonly found in Monsanto’s commercial weed-killer Roundup. Committee Chairman Lamar Smith scheduled this hearing after months of letter writing criticizing the IARC review of glyphosate and examining the EPA’s actions on glyphosate. Many of the criticisms contained in the Committee’s letters regarding IARC mimic criticisms that the chemical industry has leveled on the IARC process. Since these industry talking points are apparently the basis for both a Congressional investigation as well as a Committee hearing, Minority Committee Staff have written this staff report to better inform the Committee Members about the chemical industry tactics which have ultimately produced these industry talking points. The report necessarily focuses on the Monsanto Company due to their primary role in inventing, selling, and marketing glyphosate and glyphosate resistant seeds. This report is based in no small part on documents that have been made publically available due to ongoing third-party litigation with Monsanto.¹ These newly released public documents have revealed in an unprecedented manner the tactics of the chemical industry in attacking public health science related to their products.

Background. In March 2015, the World Health Organization’s (WHO’s) International Agency for Research on Cancer (IARC), based in Lyon, France, released a hazard assessment that found glyphosate to be “probably carcinogenic to humans.” In December 2017, the EPA released a draft human health risk assessment that concluded, “glyphosate is not likely to be carcinogenic to humans.” There are significant differences between these two types of assessments because they attempt to evaluate different questions. According to IARC, “A cancer ‘hazard’ is an agent that is capable of causing cancer under some circumstances, while a cancer ‘risk’ is an estimate of the carcinogenic effects expected from exposure to a cancer hazard.” As more scientific data is gathered and analyzed to more fully understand the impacts of glyphosate on human health, it is important for the science to lead the way, and for industry and politicians to remain on the sidelines. But that has not happened.



There is significant evidence that Monsanto launched a disinformation campaign to undermine IARC’s classification of glyphosate as a probable carcinogen. A multi-district litigation court case against Monsanto regarding potential adverse health consequences of exposures to glyphosate has revealed hundreds of pages of internal Monsanto e-mails, memorandums, and other

records that clearly show Monsanto engaged in a decades-long concerted effort to fend off any evidence suggesting potential adverse human health effects from glyphosate and more recently to undermine IARC’s findings. They ghost wrote scientific articles on glyphosate, established front groups to help amplify their anti-IARC message and scientific evidence they did not like, and they attempted to silence scientists who reached conclusions questioning glyphosate’s safety.

¹ The Monsanto Papers, Baum, Hedlund, Aristei & Goldman, accessed here: <https://www.baumhedlundlaw.com/toxic-tort-law/monsanto-roundup-lawsuit/monsanto-secret-documents/>

While there are divergent conclusions between IARC and other science agencies, including the EPA, regarding the potential human health hazard of glyphosate, even Monsanto's own scientists acknowledged in internal e-mails that Roundup, the glyphosate containing weed-killer that Monsanto sells, does cause damage. "Glyphosate is OK, but the formulated product causes the damage," one Monsanto researcher wrote in an email.² "You cannot say that Roundup is not a carcinogen," wrote another Monsanto toxicologist. "We have not done the necessary testing on the formulation to make that statement."³ What we do know is that the use of glyphosate has exploded across the United States and around the world since it first came on the market in 1974. In the U.S. alone its use has grown from 11 million pounds in 1987 to nearly 300 million pounds in 2016. Recent studies have also shown that it is prevalent in the U.S. food supply from crackers and cookies to honey and wine. Several studies have also shown that glyphosate is detectable in around 90% of the U.S. population.

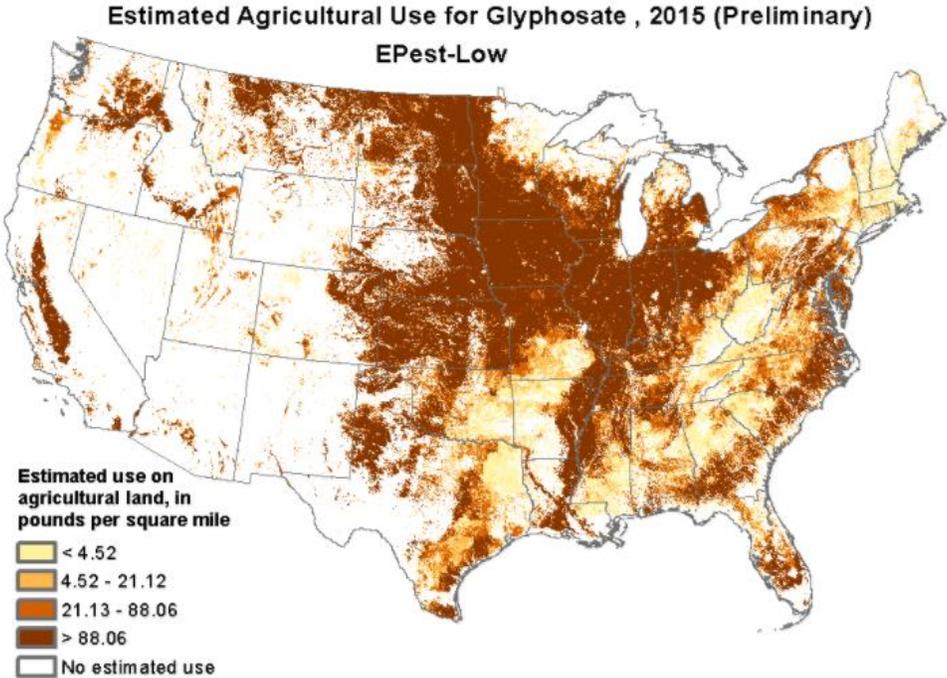
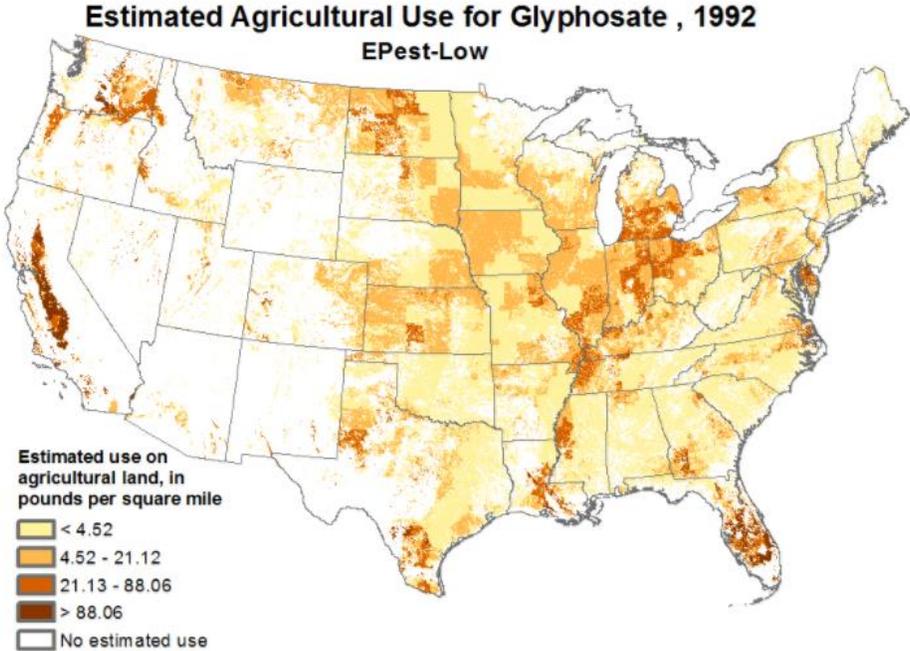
This report describes some of the tactics Monsanto has used to control the public debate about glyphosate as well as the scientific studies that have been conducted to assess its potential harm. These efforts appear aimed at corrupting and disrupting any honest, thorough and complete scientific evaluation of glyphosate and its potential adverse impact on the public's health.

² Email from William Heydens to Donna Farmer and Richard Dirks, Subject: "RE: European Commission Endocrine Disrupters developments (1)," April 25, 2002, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/37-Monsanto-Executive-Admits-Studies-Demonstrate-Formulated-Roundup-Does-the-Damage.pdf>.

³ Email from Donna Farmer to Monsanto employees, Subject: "RE: Agitation against Roundup," Nov. 22, 2003, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/27-Internal-Monsanto-Email-You-Cannot-Say-That-Roundup-is-not-a-Carcinogen.pdf>.

Glyphosate use in the United States from 1992 to 2015

(Source: U.S. Geological Survey⁴)



⁴ Glyphosate use in the U.S. 1992:
https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=1992&map=GLYPHOSATE&hilo=H;
Glyphosate use in the U.S. 2015:
https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2015&map=GLYPHOSATE&hilo=H



Key Players. The individuals listed below are some of the key players mentioned in the internal Monsanto e-mails and records cited in this report. Brief descriptions of their affiliation with Monsanto and their activities surrounding glyphosate are summarized below.

- **John Acquavella:** Former Monsanto Company Scientist, Paid Monsanto Consultant. Currently works as a Consultant/Professor Clinical Epidemiology, Aarhus University.
- **Bruce Chassy:** Professor Emeritus at the University of Illinois Department of Food Science and Human Nutrition and Monsanto grant recipient. Chassy helped organize writing campaigns to scientific journals criticizing studies on glyphosate at Monsanto's request and runs a non-profit called Academics Review that Monsanto reportedly helped to establish to provide an "independent" voice supporting glyphosate and other issues of interest to Monsanto.
- **Donna R. Farmer:** Monsanto's lead toxicologist and a Monsanto employee since 1991.
- **A. Wallace ("Wally") Hayes:** Former Editor-in-Chief for Vision and Strategy at *Food and Chemical Toxicology* journal, which, during his tenure, published and retracted the Seralini rat study. Reportedly was paid \$16,000 by Monsanto in a consulting contract.
- **William F. Heydens:** Currently Monsanto's Product Safety Assessment Strategy Lead.
- **Larry Kier:** Former Monsanto toxicologist. Authored, "Review of genotoxicity studies of glyphosate and glyphosate-based formulations," which found glyphosate posed no risk to humans.
- **David J. Kirkland:** Monsanto contractor who was a co-author with Larry Kier on the study "Review of genotoxicity studies of glyphosate and glyphosate-based formulations."
- **Henry Miller:** Stanford Hoover Institution fellow and former contributor to *Forbes*. In 2015, Miller published a *Forbes* article critical of IARC that was solicited—and largely ghostwritten—by Monsanto. *Forbes* cut ties with Miller and retracted his articles when they discovered his failure to disclose ties with Monsanto.
- **Dr. James Parry** was a Geneticist at Swansea University in the United Kingdom who was hired by Monsanto in 1999 to evaluate the genotoxicity of glyphosate. Monsanto refused to conduct additional tests at his request and attempted to "move him from his position."
- **Eric Sachs:** Monsanto Science and Policy lead since 2005; botanist and plant geneticist.
- **David A. Saltmiras:** Former Monsanto Company Toxicology Manager and author on the so-called Greim Study that refuted animal data indicating glyphosate's carcinogenicity.
- **Gilles-Éric Seralini.** French molecular biologist who conducted a study that found rats fed glyphosate-tolerant corn treated with Roundup had an increased risk of developing tumors. The study, published in the journal *Food and Chemical Toxicology*, was retracted by journal editor and Monsanto contractor A. Wallace Hayes.

Monsanto’s IARC Battle Plan. Prior to IARC’s March 2015 classification of glyphosate as a Group 2A agent that was “probably carcinogenic to humans,” Monsanto knew that the existing scientific evidence regarding potential ill-health effects from exposure to glyphosate was not on their side, according to their own internal e-mails. In October 2014, Monsanto scientist William Heydens wrote in an e-mail with the Subject hearing “IARC Evaluation of Glyphosate,” “[W]hile we have vulnerability in the area of epidemiology, we also have potential vulnerabilities in the other areas that IARC will consider, namely, exposure, genotox, and mode of action...”⁵

International Agency Research on Cancer



World Health
Organization

By February 2015, a battle plan to confront what they suspected would be bad news for glyphosate was already underway.⁶ “We should assume and prepare for the outcome of a 2B rating (*possible* human carcinogen); a 2A rating (*probable* human carcinogen) is possible but less likely.” Glyphosate received the 2A rating by IARC. According to several key records unsealed in the multi-district litigation against Monsanto, including the company’s “Preparedness and Engagement Plan for IARC Carcinogen Rating of Glyphosate,” dated February 17, 2015, Monsanto was ready for a full-borne defense of glyphosate when IARC released its Monograph on glyphosate in March 2015.⁷

The Monsanto attack plan included efforts to “amplify” their message that glyphosate was safe pointing to industry-sponsored studies and industry-placed news stories. They sought to generate industry “outrage” over what they thought would be a 2B rating. They had plans to address these “new allegations” regarding the potential hazard of glyphosate and to “neutralize” the impact. They also sought to “amplify” the “positive” message about glyphosate’s safety via social media platforms including Twitter and Facebook. They turned to industry trade groups, such as CropLife and industry front groups, such as Genetic Literacy Project and Academics Review as platforms of support for industry spokespersons. They also sought third-party experts to “blog, op/ed, tweet and/or link, repost, retweet, etc.” They were planning an onslaught of actions to help undermine IARC and to embolden their justifications to dismiss IARC’s scientific findings. They have carried out that battle plan in a consistent and very aggressive manner ever since.

Separately from Monsanto’s attacks on IARC they have also tried to wield their influence at the Environmental Protection Agency (EPA) as well. In some instances, they have objected to key scientists sitting on EPA science panels reviewing glyphosate’s safety. There have also been questions about other tactics. In May 2017 the EPA’s Office of Inspector General opened “an investigation into reports that an EPA employee may have colluded with Monsanto to conduct a biased review of glyphosate,” according to the IG’s letter announcing the investigation.⁸

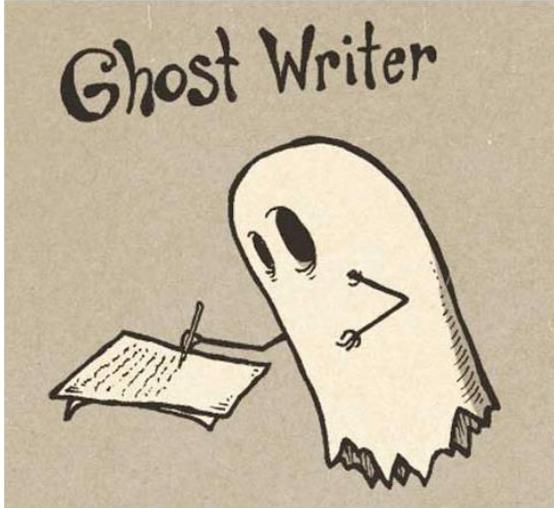
⁵ Email from William Heydens to Monsanto employees, Subject: “IARC Evaluation of Glyphosate,” October 15, 2014, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/35-Monsanto-Admits-Company-Faces-Issues-in-Epidemiology-Exposure-Genotoxicity-and-Mode-of-Action.pdf>

⁶ Monsanto internal document, “Glyphosate: IARC,” (also referred to as the Monsanto IARC Battle Plan by the media) February 23, 2015, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/72-Document-Details-Monsantos-Goals-After-IARC-Report.pdf>

⁷ *Ibid.*

⁸ See: Tiffany Stecker, “Watchdog May Find EPA-Monsanto Links on Pesticides Routine,” Bloomberg Energy & Environment Report, June 8, 2017, accessed here: <https://www.bna.com/watchdog-may-find-n73014453069/>

Ghostwriting. Internal Monsanto e-mails show that Monsanto scientists “ghost wrote” scientific journal articles on glyphosate. It is clear from these e-mails, revealed in court documents, that ghostwriting articles on glyphosate was a concerted effort by the company. Monsanto scientists wanted to both steer the scientific studies away from identifying potential



adverse human health effects from exposure to glyphosate and they wanted other “independent” scientists listed on these studies to provide the aura of objectivity and independence.

Monsanto did this on several occasions. The internal e-mails show a clear and consistent attempt by some Monsanto scientists to obfuscate their roles in writing, directing and funding glyphosate-related studies. Equally disturbing are examples where they attempted to bury scientific study results that *did* show potential adverse effects from glyphosate exposures. Many of these e-mails portray Monsanto scientists as less interested in discovering if glyphosate and Monsanto’s herbicide

Roundup could have toxic effects and more interested in developing studies that showed no potential ill health effects and had the veneer of independence and objectivity. The e-mails and other records unsealed in the Monsanto court case regarding Roundup have begun to pull back the curtain on those claims and the company’s extraordinary efforts to discredit the scientific conclusions made by IARC on glyphosate and to undermine the reputation of the science agency.

Ghostwriting Greim. In 2015, Monsanto anticipated, based on the scientific evidence that was publicly available, that IARC would classify glyphosate as either a Group 2B agent (*possibly* carcinogenic to humans) or Group 2A agent (*probably* carcinogenic to humans). In preparation, they sought to publish new papers countering the animal data used by IARC, which ultimately concluded in March 2015 that glyphosate was a Group 2A agent, “*probably* carcinogenic to humans.” In an email between Monsanto scientists Bill Heydens and Donna Farmer, they discuss what became known as the “Greim paper” – a 2015 study published in *Critical Reviews in Toxicology* whose listed authors include Helmut Greim and David Saltmiras.⁹ In the emails, they contemplate paying for a study to combat problematic findings, but determine a cheaper option would be to “ghost-write the Exposure Tox & Genetox sections... [and] add Greim and Kier or Kirkland to have their names on the publication, but we would be keeping the cost down by us doing the writing and they would just edit & sign their names so to speak.”¹⁰ The paper, published in March 2015 with Greim as the lead author, concluded: “After almost forty years of commercial use, and multiple regulatory approvals including toxicology evaluations, literature

⁹ Greim H, Saltmiras D, Mostert V, Strupp C, “Evaluation of carcinogenic potential of the herbicide glyphosate, drawing on tumor incidence data from fourteen chronic/carcinogenicity rodent studies,” *Critical Reviews in Toxicology*, March 2015, accessed here: <https://www.ncbi.nlm.nih.gov/pubmed/25716480>.

¹⁰ Email from William Heydens to Donna Farmer, cc David Saltmiras and other Monsanto employees, Subject: “RE: IARC Planning,” February 19, 2015, accessed here: <https://www.baumhedlundlaw.com/pdf/monsanto-documents/Email-Correspondence-Wherein-William-Heydens-Suggests-Experts-Could-Edit-and-Sign-Their-Names-to-Scientific-Paper.pdf>.

reviews, and numerous human health risk assessments, the clear and consistent conclusions are that glyphosate is of low toxicological concern, and no concerns exist with respect to glyphosate use and cancer in humans.” That conclusion dismissed or ignored multiple other studies that have questioned glyphosate’s safety.

Multiple internal Monsanto records show that whatever role Greim had in the study, Monsanto scientists were clear that they were in charge and conducted the bulk of the work on the paper. One internal Monsanto powerpoint slide says Monsanto could use Greim and one or two other external authors on the paper they envisioned but that the “Majority of writing can be done by Monsanto, keeping OS\$ down.”¹¹ David Saltmiras, a Monsanto scientist who was a co-author with Greim on the paper, wrote a description of his work for Monsanto in August 2015 labelled “Glyphosate Activities.” He wrote that he “ghost wrote cancer review paper Greim et al. (2015).”¹²

E-mail from Monsanto’s William Heydens to Donna Farmer and cc’d to David Saltmiras, et. al., February 19, 2015.

Subject: RE: IARC Planning

“A LESS EXPENSIVE/MORE PALATABLE APPROACH MIGHT BE TO INVOLVE EXPERTS ONLY FOR THE AREAS OF CONTENTION, EPIDEMIOLOGY AND POSSIBLY MOA [MODE OF ACTION] (DEPENDING ON WHAT COMES OUT OF THE IARC MEETING), AND WE GHOST-WRITE THE EXPOSURE TOX & GENETOX SECTIONS. AN OPTION WOULD BE TO ADD GREIM AND KIER OR KIRKLAND TO HAVE THEIR NAMES ON THE PUBLICATION, BUT WE WOULD BE KEEPING THE COST DOWN BY US DOING THE WRITING AND THEY WOULD JUST EDIT & SIGN THEIR NAMES SO TO SPEAK. RECALL THAT IS HOW WE HANDLED WILLIAMS KROES & MUNRO, 2000.”¹⁰

¹¹ Monsanto internal presentation, “Proposal for Post-IARC Meeting Scientific Projects DRAFT,” May 11, 2015, accessed here: <https://www.baumhedlundlaw.com/pdf/monsanto-documents/Monsanto-Proposal-for%20Post-IARC-Meeting-Scientific-Projects.pdf>.

¹² David Saltmiras custodial document, “Glyphosate Activities,” August 4, 2015, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/18-Monsanto-Scientist-Admits-to-Ghostwriting-Cancer-Review-Paper.pdf>.

The Greim paper became a focal point of Monsanto's objections to IARC, with the company claiming that if it had been considered, the classification of glyphosate would have been different. While the definition of ghostwriting often differs from this situation – typically meaning that the true author is unnamed – Monsanto itself referred to this process as “ghostwriting” multiple times. In addition, e-mails from Monsanto scientists show that this was not the first time they had “ghostwritten” a journal article on glyphosate. One e-mail says that Monsanto scientists had also ghostwritten an article and had the independent scientists simply edit and sign their names to the paper back in 2000.¹³

E-mail from William Heydens (Monsanto scientist) to John Acquavella (retired Monsanto scientist), November 3, 2015, 1:49 p.m.

Subject: Re: Glyphosate Expert Panel Poster at 2015 SRA Annual Meeting

“I THOUGHT WE DISCUSSED PREVIOUSLY THAT IT WAS DECIDED BY OUR MANAGEMENT THAT WE WOULD NOT BE ABLE TO USE YOU OR LARRY AS PANELISTS/AUTHORS BECAUSE OF YOUR PRIOR EMPLOYMENT AT MONSANTO...”¹⁴

E-mail from John Acquavella (retired Monsanto scientist) to William Heydens (Monsanto scientist), November 3, 2015, 2:55 p.m.

Subject: Re: Glyphosate Expert Panel Poster at 2015 SRA Annual Meeting

“I DON'T THINK THAT WILL BE OKAY WITH MY PANELISTS. WE CALL THAT GHOST WRITING AND IT IS UNETHICAL.”¹⁴

Too close for comfort. On the other extreme, Monsanto, at times, has sought to have former Monsanto scientists distance themselves from Monsanto's scientific studies to maintain the charade of independence they have attempted to convey on Monsanto-directed research. In 2015, after the release of the IARC monograph on glyphosate, Monsanto put together a supposedly independent “expert panel review” to dispute the IARC classification. Their effort to bury Monsanto ties to the panel was complicated by a retired Monsanto

scientist who was now consulting for the company, John Acquavella. He objected to his name

¹³ Email from William Heydens to Donna Farmer, cc David Saltmiras and other Monsanto employees, Subject: “RE: IARC Planning,” Feb. 19, 2015, accessed here: <https://www.baumhedlundlaw.com/pdf/monsanto-documents/Email-Correspondence-Wherein-William-Heydens-Suggests-Experts-Could-Edit-and-Sign-Their-Names-to-Scientific-Paper.pdf>;

See: Gary M. Williams, Robert Kroes and Ian C. Munro, “Safety Evaluation and Risk Assessment of the Herbicide Roundup and Its Active Ingredient, Glyphosate, for Humans,” *Regulatory Toxicology and Pharmacology*, Volume 31, Issue 2, April 2000, Accessed here: <https://www.sciencedirect.com/science/article/pii/S0273230099913715?via%3DIihub>;

Despite the evidence in the Monsanto e-mails some of the independent scientists mentioned by Monsanto regarding the “ghost writing” of articles have said they would never do such a thing. See: Warren Cornwall, “Update: After quick review, medical school says no evidence Monsanto ghostwrote professor's paper,” *Science Magazine*, March 23, 2017, accessed here: <http://www.sciencemag.org/news/2017/03/update-after-quick-review-medical-school-says-no-evidence-monsanto-ghostwrote>.

being omitted from a poster listing the names of authors and experts on that panel. Heydens responded to his objection by explaining that management “would not be able to use your or Larry [Kier] as Panelists / authors because of your prior employment at Monsanto.” Acquavella was blunt in his response, writing back, “I don’t think that will be okay with my panelists. We call that ghost writing and it is unethical.”¹⁴

The next day Acquavella writes that he “can’t be part of deceptive authorship on a presentation or publication” and he schools his former Monsanto co-workers in the ethics of authorship by including excerpts of the International Committee of Medical Journal Editors (ICJME) recommendations regarding authorship.¹⁵

E-mail from John Acquavella (retired Monsanto scientist) to William Heydens (Monsanto scientist), and cc’d to Donna Farmer
November 4, 2015,
Subject: Re: Glyphosate Expert Panel Poster at 2015 SRA Annual Meeting

“YOU GUYS KNOW ME. I CAN’T BE A PART OF DECEPTIVE AUTHORSHIP ON A PRESENTATION OR PUBLICATION. PLEASE NOTE THE ICJME GUIDELINES BELOW THAT EVERYONE GOES BY TO DETERMINING WHAT IS HONEST/ETHICAL REGARDING AUTHORSHIP.”¹⁴

Two days later Monsanto’s Heydens attempts to backtrack and set

the record straight after a phone call with Acquavella and Donna Farmer. He describes this whole episode as a “huge misunderstanding around authorship.”¹⁶

E-mail from Erich Sachs to various other Monsanto employees, including Donna Farmer and David Saltmiras,
February 24, 2015
Subject: Re: Opportunity: Glyphosate and IARC

JOHN V AND I TALKED TO HENRY MILLER TODAY. HENRY AGREED TO AUTHOR AN ARTICLE ON FORBES.COM JOHN WILL WORK WITH A TEAM INTERNALLY TO PROVIDE A DRAFT AND HENRY WILL EDIT/ADD TO MAKE IT HIS OWN. THE ARTICLE CAN BE LIVE SAME DAY IT IS COMPLETED.

¹⁸

Ultimately, a later email indicates that Monsanto listed Acquavella as an author. In fact, the abstract, “*Expert Panel Review of the Carcinogenic Potential of the Herbicide Glyphosate*,” as published in the Society for Risk Analysis’ 2015 Annual Meeting also included Williams, Greim, Kier and Kirkland, who Monsanto

¹⁴ Emails between John Acquavella, William Heydens, and Donna Farmer, Subject: “John, Glyphosate Expert Panel Poster at 2015 SRA Annual Meeting,” Nov. 3 – 6, 2015, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/6-Monsanto-Consultant-Protests-Ghostwriting.pdf>.

¹⁵ Ibid.

¹⁶ Ibid.

scientists had named in internal e-mails as individuals they had or believed they could ghost write scientific studies on glyphosate for, although Monsanto scientists would do the bulk of the writing.¹⁷

Hiring journalists to discredit IARC.

In Monsanto's effort to discredit IARC, they sought to recruit writers to publish pieces echoing their criticisms of IARC's process. In February 2015, one month before IARC published their glyphosate monograph that found glyphosate to be a "probable human carcinogen," Monsanto scientist Eric Sachs reached out to Henry Miller, a *Forbes* contributor and a Medical Doctor and Fellow in Scientific Philosophy and Public Policy at Stanford University's Hoover Institute, a conservative think tank. Sachs prompted Miller on the desired content of the article, writing, "Ideally, your article would precede the IARC decision. Why not set the table with the weight of scientific evidence before IARC convenes? Then, regardless of what they do, your article will set the state for a science-based response."¹⁸ Miller agreed – and, after a follow-up email, requested a "high quality draft" from Monsanto.¹⁹ Officials at the company quickly got to work and provided Miller with a draft that was posted on the *Forbes* website largely unchanged. The article was published on March 17, 2015, with the title: "March Madness from the United Nations."²⁰

When this ghostwriting was discovered, Miller was fired by *Forbes*. In a statement to Retraction Watch, a *Forbes* representative said: "All contributors to *Forbes.com* sign a contract requiring them to disclose any potential conflicts of interest and only publish content that is their own original writing. When it came to our attention that Mr. Miller violated these terms, we removed all of his posts from *Forbes.com* and ended our relationship with him."²¹

¹⁷Society for Risk Analysis 2015 Annual Meeting Abstracts, Dec. 6-10, 2015, Arlington, Virginia, see page 136, Williams, GM, et. al., "Expert Panel Review of the Carcinogenic Potential of the Herbicide Glyphosate," accessed here: <http://www.sra.org/sites/default/files/pdf/events/Abstracts%202015.pdf>

¹⁸ Email from Eric Sachs to Henry Miller, Subject "Opportunity: Glyphosate and IARC," Feb. 23, 2015, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/21-Internal-Monsanto-Email-Detailing-Company-Effort-to-Preemptively-Criticize-IARC-Ahead-of-Glyphosate-Report.pdf>.

Pull quote citation: Email from Eric Sachs to Donna Farmer, David Saltmiras, and other Monsanto employees, Feb. 24, 2015, link above.

¹⁹ Email from Henry Miller to Eric Sachs, Subject: "Re: IARC Outcomes, Process, and Response," March 12, 2015, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/22-Internal-Email-Demonstrating-Monsanto-Ghostwriting-Article-Criticizing-IARC-for-Press.pdf>.

²⁰ Henry Miller, "March Madness from the United Nations," *Forbes*, March 17, 2015, accessed here: <https://web.archive.org/web/20170220012554/https://www.forbes.com/sites/henrymiller/2015/03/20/march-madness-from-the-united-nations/#21e081ee2e9>.

²¹ Andrew P. Han, "Unearthed emails: Monsanto connected to campaign to retract GMO paper," Aug. 10, 2017, Retraction Watch, accessed here: <http://retractionwatch.com/2017/08/10/unearthed-docs-monsanto-connected-campaign-retract-gmo-paper/>

Orchestrate Outcry. Henry Miller, whose clandestine ties to Monsanto got him removed as a contributor at *Forbes*, co-authored a piece on *Forbes.com* in September 2012 with Bruce Chassy, the former head of the Department of Food Science and Nutrition at the University of Illinois at Urbana-Champaign. Chassy too has opaque ties to Monsanto.²² He received funds



from Monsanto for research through the University of Illinois and he would later be recruited to defend Monsanto on the chemical industry website GMO Answers²³ and established a non-profit website called Academics Review with Monsanto's assistance.²⁴ The article Miller and Chassy wrote for *Forbes* critiqued a study of glyphosate by French microbiologist Gilles-Eric Seralini in the journal *Food and Chemical Toxicology (FCT)* that found that the glyphosate containing herbicide Roundup and genetically modified glyphosate-resistant corn caused tumors in rats.²⁵

This spelled trouble for Monsanto's Roundup Ready crops. Monsanto was tipped off about the publication of the Seralini paper by *FCT*'s Editor in Chief for Vision and Strategy, Wally Hayes. On September 26, 2012 Monsanto scientist David Saltmiras sent an e-mail to colleagues and wrote: "Wally Hayes (*FCT* Editor in Chief) called me this morning in response to my voice mail yesterday. He expressed concern that to date he has only received links to blogs, web postings, media releases, etc. and no formal letters to the Editor" regarding the Seralini article.²⁶ He needed more.

E-mail from Monsanto's Eric Sachs to David Saltmiras, William Heydens, et. al., September 26, 2012.

Subject: RE: Letters to the Editor?

"I TALKED TO BRUCE CHASSY AND HE WILL SEND HIS LETTER TO WALLY HAYES DIRECTLY AND NOTIFY OTHER SCIENTISTS THAT HAVE SENT LETTERS TO DO THE SAME. HE UNDERSTANDS THE URGENCY."²⁶

²² Tom Philpott, "These Emails Show Monsanto Leaning on Professors to Fight the GMO PR War," Mother Jones, Oct. 2, 2015, accessed here: <https://www.motherjones.com/food/2015/10/monsanto-professors-gmo-pr/>.

²³ "A University of Illinois Professor Joins the Fight," Sept. 5, 2015, New York Times, accessed here: <https://www.nytimes.com/interactive/2015/09/05/us/document-chassy.html>

²⁴ Stacy Malkan, "Monsanto Fingerprints Found All Over Attack On Organic Food," Dec. 6, 2017, HuffPost, accessed here: https://www.huffingtonpost.com/stacy-malkan/monsanto-fingerprints-fou_b_10757524.html ; "Academics Review – About," accessed here: <http://academicsreview.org/about-academic-review/>

²⁵ Gilles-Eric Seralini et al., "Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize," *Food and Chemical Toxicology*, Sept. 19, 2012, accessed here: https://ac.els-cdn.com/S0278691512005637/1-s2.0-S0278691512005637-main.pdf?_tid=58d0db10-0a9c-11e8-b8f6-00000aacb35f&acdnat=1517852905_42d9615555402636b3cd425628eb849f.

²⁶ Email from David Saltmiras to Eric Sachs, William Heydens, and other Monsanto employees, Subject: "Letters to the Editor?", Sept. 26, 2015, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/7-Monsanto-Personnel-Discusses-Plan-Seeking-Retracton-of-Serlani-Glyphosate-Study.pdf>.

Pull quote citation: Email from Eric Sachs to Monsanto employees, Sept. 26, 2012, link above.

Internal Monsanto records show that Monsanto started aggressively attempting to attack the Seralini paper through third-parties. Monsanto began working their network of scientists.

Monsanto's Daniel Goldstein to Monsanto scientist Eric Sachs, September 28, 2012

Subject: RE: Slides – Seralini Publication

“I WAS UNCOMFORTABLE EVEN LETTING SHAREHOLDERS KNOW WE ARE AWARE OF THIS LTE.... IT IMPLIES WE HAD SOMETHING TO DO WITH IT-OTHERWISE HOW DO WE HAVE KNOWLEDGE OF IT?

WE ARE BEING ASKED TO KEEP INTERNAL CORRESPONDENCE DOWN ON THIS SUBJECT.”²⁸

get this paper retracted,” wrote Monsanto scientist Eric Sachs.²⁷ Others agreed, including Monsanto’s Daniel Goldstein, who wrote: “We are being asked to keep internal correspondence down on this subject.”²⁸

While Monsanto’s quiet third-party efforts seemed to help, there was something else working in Monsanto’s favor. Wally Hayes, the *FCT* editor who was also a professor at the Harvard School of Public Health had apparently signed a consulting agreement on August 21, 2012, with Monsanto just before the Seralini paper dispute heated up. A letter dated September 7, 2012 from Monsanto to Hayes, just three weeks before Hayes and Saltmiras began talking about the Seralini paper, was identified as an “Authorization Letter” to the August 21, 2012 Consulting Agreement. The letter said that Hayes’ services in setting up a Latin America South Toxicology Expert Panel, slated to begin on September 7, 2012, would pay him \$400 an hour, not to exceed \$3,200 per day, for a total of \$16,000. David Saltmiras was listed as Monsanto’s representative for the project.²⁹

The Seralini paper was officially retracted by Hayes and *FCT* in 2013.³⁰ Hayes told the *New York Times* that he had not been under contract with Monsanto at the time of the retraction and was paid by the company only after he left the journal. “Monsanto played no role whatsoever in

²⁷ Ibid.

²⁸ Email from Daniel Goldstein to Eric Sachs and Yong Gao, Subject: “RE: Slides- Seralini Publication,” Sept. 28, 2012, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/14-Monsanto-Emails-Confirming-Undisclosed-Involvement-in-Successful-Retracted-of-Serlani-Study.pdf>

²⁹ “Authorization Letter to Consulting Agreement dated August 21, 2012, between Prof. A. Wallace Hayes and Monsanto Company,” Aug. 21, 2012, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/10-Monsanto-Consulting-Agreement-with-Food-and-Chemical-Toxicology-Editor.pdf>.

³⁰ Andrew Pollack, “Paper Tying Rat Cancer to Herbicide Is Retracted,” *New York Times*, Nov. 28, 2013, accessed here: <http://www.nytimes.com/2013/11/29/health/paper-tying-rat-cancer-to-herbicide-is-retracted.html>.

the decision that was made to retract,” he told the newspaper. “It was based on input that I got from some very well-respected people, and also my own evaluation,” he said.³¹

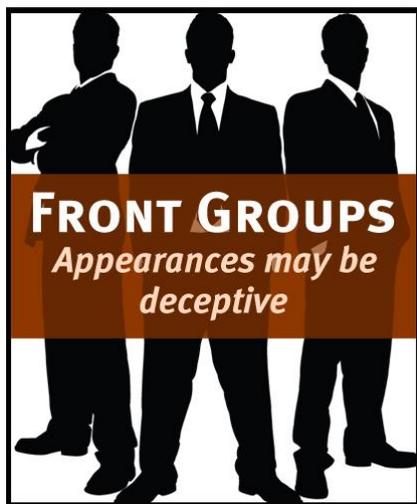
Meanwhile, Monsanto’s Saltmiras’s own “business performance” plan for FY2013 touts his own success in these efforts. “Successfully facilitate numerous third party expert letters to the editor which were subsequently published, reflecting the numerous significant deficiencies, poor study design, biased reporting and selective statistics employed by Seralini,” Saltmiras wrote in his review.³² The website Retraction Watch noted however, “An FCT investigation found no evidence of fraud, misconduct, or gross error, [in the Seralini paper], which are required by Committee on Publication Ethics (COPE) guidelines for retraction; however, FCT cited COPE guidelines in their retraction notice anyway.”³³

³¹Danny Hakim, “Monsanto Emails Raise Issue of Influencing Research on Roundup Weed Killer,” New York Times, Aug 1, 2017, accessed here: <https://www.nytimes.com/2017/08/01/business/monsantos-sway-over-research-is-seen-in-disclosed-emails.html>.

³² Internal Monsanto document by David Saltmiras, “FY2013,” Aug. 20, 2013, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/8-Monsanto-Scientist-Admits-to-Leveraging-Relationship-with-Food-and-Chemical-Toxicology-Journal.pdf>.

³³Andrew P. Han, “Unearthed emails: Monsanto connected to campaign to retract GMO paper,” Retraction Watch, Aug 10, 2017, accessed here” <http://retractionwatch.com/2017/08/10/unearthed-docs-monsanto-connected-campaign-retract-gmo-paper/>.

Establish Front Groups. Media reports have pointed to several seemingly independent non-profit groups as having close ties to Monsanto. Some were reportedly established with assistance from Monsanto in order to serve as a platform to confront scientific findings revealing



potential health hazards from glyphosate while concealing Monsanto's direct involvement. This confront-and-conceal approach is nothing new. These tactics have been used by the tobacco industry, energy sector and chemical companies. They often have innocuous-sounding names – for instance, the Campaign for Accuracy in Public Health Research (CAPHR), which is run by the American Chemistry Council (ACC). In this case, the ACC has not attempted to hide their ties with CAPHR and even announced its launch in January 2017. The organization's primary target is IARC.³⁴ The group's initial press release said: "In particular, CAPHR will seek reform of the International Agency for Research on Cancer's (IARC) Monographs Program, which evaluates the carcinogenic hazard of substances and behaviors."³⁵

Other front groups are more secretive. Academics Review was co-founded by Bruce Chassy. The site was founded in January 2010 to "ensure that sound science is widely and easily available." It describes itself as "an association of academic professors, researchers, teachers and credentialed authors from around the world" who "stand against falsehoods, half-baked assertions and theories or claims not subjected to this kind of rigorous review."³⁶ What it does not reveal are the close ties between Chassy and Monsanto. But one e-mail exchange between Monsanto's Eric Sachs and Chassy shows Monsanto was interested in using the site to its advantage as long as it was able to hide its involvement. "The key will be keeping Monsanto in the

E-mail from Monsanto's Eric Sachs to Bruce Chassy, co-founder of Academics Review.

November 30, 2010

"YOU AND I NEED TO TALK MORE ABOUT THE "ACADEMICS REVIEW" SITE AND CONCEPT. I BELIEVE THAT THERE IS A PATH TO A PROCESS THAT WOULD BETTER RESPOND TO SCIENTIFIC CONCERNS AND ALLEGATIONS. ... FROM MY PERSPECTIVE THE PROBLEM IS ONE OF EXPERT ENGAGEMENT AND THAT COULD BE SOLVED BY PAYING EXPERTS TO PROVIDE RESPONSES. ... THE KEY WILL BE KEEPING MONSANTO IN THE BACKGROUND SO AS NOT TO HARM THE CREDIBILITY OF THE INFORMATION."³⁷

³⁴ Campaign for Accuracy in Public Health Research, "IARC," accessed here: <http://campaignforaccuracyinpublichealthresearch.com/iarc/>.

³⁵ American Chemistry Council, "ACC Launches Campaign to Promote Credibility in Public Health Research," Jan. 25, 2017, accessed here: <https://www.americanchemistry.com/Media/PressReleasesTranscripts/ACC-news-releases/ACC-Launches-Campaign-to-Promote-Credibility-in-Public-Health-Research.html>.

³⁶ Academics Review, "Purpose," accessed here: <http://academicsreview.org/about-academic-review/purpose/>.

background so as not to harm the credibility of the information,” wrote Sachs.³⁷

Silence Scientists. Monsanto and other large corporate interests use multiple tactics in their attempts to delay regulations, deter the publication of scientific findings that endanger their corporate profits, and degrade scientific institutions, such as IARC, that are independent and a

ALL QUIET
ON THE
SCIENCE
FRONT



threat to an industry’s influence and a challenge to their disinformation campaigns. Sometimes they also attack specific scientists who are independent and pose a potential threat to their objectives and activities as a result of their scientific studies, interests or integrity.

Dr. Peter Infante, a renowned and highly respected epidemiologist, has been the victim of industry attacks for four decades due to his solid scientific findings on the cancer-causing properties of chemicals such as formaldehyde

and benzene and arsenic. In the early 1980s, when he was a senior official at the Occupational Safety and Health Administration (OSHA) the House Science Committee held a hearing on the “Proposed firing of Dr. Peter Infante by OSHA” due to pressure on OSHA from the Formaldehyde Institute.³⁸ The oversight hearing was led by then Representative Al Gore, and OSHA eventually backed down from its attempt to fire Dr. Infante. More recently it has been the glyphosate industry led by CropLife America, the national trade association that represents the manufacturers, formulators and distributors of pesticides, that has gone after Dr. Infante.

In 2016, Dr. Infante was selected as a Member of the Environmental Protection Agency’s Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Scientific Advisory Panel (SAP) on the Evaluation of the Human Carcinogenic Potential of Glyphosate. In October 2016, CropLife sent a letter to the EPA citing concerns about the SAP,³⁹ specifically citing Dr. Infante’s participation. The CropLife letter stated that Dr. Infante had biases against industry and should therefore be removed from the Panel. Dr. Infante sent a rebuttal letter⁴⁰ to the EPA as did the Center for Food Safety defending Dr. Infante.⁴¹ However, prior to the December 2016 meeting of the SAP, EPA officials removed Dr. Infante from the SAP on glyphosate without

³⁷ Email from Eric Sachs to Bruce Chassy, Subject: “Questions,” Nov. 30, 2010, accessed here: <https://www.usrtk.org/wp-content/uploads/2016/01/Sachs-AR.pdf>.

³⁸ “Proposed Firing of Dr. Peter Infante by OSHA: A Case Study in Science and Regulation,” Subcommittee on Investigations and Oversight of the Committee on Science and Technology, U.S. House of Representatives, July 16, 1981, accessed here: <https://babel.hathitrust.org/cgi/pt?id=mdp.39015082337588;view=1up;seq=8>.

³⁹ Letter from CropLife to EPA, Oct. 12, 2016, accessed here: <http://191hmt1pr08amfq62276etw2.wpengine.netdna-cdn.com/wp-content/uploads/2016/01/CLA-Comments-on-SAP-Disqualification-10-12-16.pdf>.

⁴⁰ Comment submitted by Peter F. Infante, Consultant, Peter F. Infante Consulting, LLC,” Regulations.gov, Oct. 21, 2016, accessed here: <https://www.regulations.gov/document?D=EPA-HQ-OPP-2016-0385-0439>.

⁴¹ Comment submitted by Center for Food Safety to EPA, “RE: Scientific Advisory Panel meeting on glyphosate’s carcinogenic potential,” Dec. 12, 2016, accessed here: http://www.centerforfoodsafety.org/files/glyphosate-sap-infante-letter--cfs-12-12-16_02026.pdf.

explanation.⁴² This sort of industry influence has accelerated at Scott Pruitt’s EPA, where he has intentionally removed independent scientists from the Agency’s science advisory boards and stated that he wants them replaced with more scientists from regulated industries.

E-mail from Monsanto’s Donna Farmer,
April 17, 1999 (recipients unknown)
Subject: Meeting Minutes

“DR. PARRY CONCLUDED ON HIS EVALUATION OF THE FOUR ARTICLES THAT GLYPHOSATE IS CAPABLE OF PRODUCING GENOTOXICITY BOTH IN VIVO AND IN VITRO... IN ORDER TO MOVE DR. PARRY FROM HIS POSITION WE WILL NEED TO PROVIDE HIM WITH THE ADDITIONAL INFORMATION AS WELL AS ASKING HIM TO CRITICALLY EVALUATE THE QUALITY OF ALL THE DATA INCLUDING THE OPEN LITERATURE STUDIES. ... MARK WILL ALSO EXPLORE HIS INTEREST (IF WE CAN TURN HIS OPINION AROUND) IN BEING A SPOKESPERSON FOR US FOR THESE TYPE OF ISSUES.”⁴³

Dr. James Parry. It is important to understand that Monsanto’s aggressive tactics regarding its efforts to defend glyphosate and its highly successful product Roundup have been going on for decades. Like so many chemical-based products, however, as scientific evidence of potential worry accumulate, the potential threat to the commercial viability and sustainability of the product can grow. It is clear from the substantive documents that have come to light recently that Monsanto has been fending off those sorts of threats for many years.

In the past, Monsanto has even sought to silence their own scientists, when they discovered evidence of potential adverse human health effects from exposures to glyphosate. Back in 1999, Monsanto’s contracted scientist, Dr. James Parry, a geneticist at Swansea University in the United Kingdom, was one of them. Monsanto hired Parry to evaluate the genotoxicity of glyphosate, and, to their disappointment, Parry concluded that “glyphosate is capable of producing genotoxicity both in vivo and in vitro by a

mechanism based upon the production of oxidative damage.”⁴³ Disturbingly, internal Monsanto e-mails show that Monsanto scientists contemplated ways to “move Dr. Parry from his position”⁴⁴ regarding the toxicity of glyphosate. Parry also signed a secrecy agreement with Monsanto in April 1999. The contents of the agreement are not known, but it does not appear that Dr. Parry ever published his findings regarding glyphosate’s genotoxicity.

⁴² “Panel Member Roster, Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel, Open Meeting, December 13-16, 2016,” Regulations.gov, Nov. 28, 2016, accessed here: <https://www.regulations.gov/document?D=EPA-HQ-OPP-2016-0385-0454>.

⁴³ Email from Donna Farmer to unknown recipients, Subject: “Meeting Minutes 2/25,” April 17, 1999, accessed here: <http://baumhedlundlaw.com/pdf/monsanto-documents/38-Email-Shows-Former-Monsanto-Expert-Confirmed-Biological-Plausibility-of-Glyphosate-as-Carcinogen.pdf>.

⁴⁴ Ibid.

As part of Parry's review, he suggested additional studies into the genotoxicity of glyphosate. Monsanto was opposed to funding these additional studies, however, and Bill Heydens expressed his disappointment in the Parry review in an email to colleagues and expressed the importance of finding a pro-glyphosate advocate. This was important, he wrote, because Monsanto was "currently very vulnerable in this area" regarding the genotoxicity of glyphosate. "We want to find/develop someone who is comfortable with the genetox profile of glyphosate/Roundup and who can be influential with regulators and scientific outreach operations when genetox issues arise," added Heydens.⁴⁵

E-mail from Monsanto's William Heydens to Erik Jacobs, et. al., April 10, 2001
Subject: RE: Propachlor sample request

"DATA GENERATED BY ACADEMICS HAS ALWAYS BEEN A MAJOR CONCERN FOR US IN THE DEFENSE OF OUR PRODUCTS. ... CONSIDER THE RAMIFICATIONS OF A POSITIVE RESPONSE ON EUROPEAN AND US REGISTRATIONS."⁴⁶

In 2001, Parry reached out to Monsanto again to obtain a sample of another herbicide, Propachlor, so he could conduct studies on it. Monsanto employees disagreed on how to handle this request. Mark Martens supported providing the samples, so as to "keep prof Parry happy which will make him a good proponent of glyphosate." Bill Heydens, however, had concerns. "Data generated by academics has always been a major concern for us in the defense of our products," he wrote.⁴⁶

Conclusion. The incidents and tactics outlined in this report are, unfortunately, not surprising when it comes to the chemical industry. These same tactics were employed by the chemical industry with regards to lead and a host of other chemicals. They also mimic the tobacco industry's efforts to muddy the science surrounding the health effects of smoking. These efforts have been thoroughly documented, perhaps most notably in David Michaels book, "Doubt is Their Product: How Industry's Assault on Science Threatens Your Health," and in "Merchants of Doubt," by Naomi Oreskes and Erik M. Conway. These industry efforts oftentimes only come to light through disclosure of internal industry documents through the discovery process during litigation. The disclosures made during tobacco litigation revealed the inner workings of the "science for hire" industry and industry's tactics to undercut legitimate science. Likewise, this report relies heavily on documents which have been publically released in the ongoing litigation with Monsanto. That litigation is ongoing, and many documents and deposition transcripts remain under court seal. As these documents continue to be released to the public, more revelations about industry tactics and influence will undoubtedly come to light.

⁴⁵ Email from William Heydens to Mark Martens, Larry Kier, and Donna Farmer, Subject: "RE: Parry report," Sept. 16, 1999, accessed here: <https://www.baumhedlundlaw.com/pdf/monsanto-documents/Email-from-William-Heydens-Monsanto-Vulnerable-on-Gene-Tox-After-Parry.pdf>.

⁴⁶ Email from William Heydens to Mark Martens and other Monsanto employees, Subject: "RE: Propachlor sample request," April 10, 2001, accessed here: <https://www.baumhedlundlaw.com/pdf/monsanto-documents/Email-Exchange-Responding-to-Dr-James-Parry-Request-to-Test-Propachlor-Monsanto-Herbicide.pdf>.

Given the public policy implications of the IARC and EPA reviews of glyphosate (and other chemicals), staff wanted to ensure that Members had the most up to date information concerning the troubling industry led efforts to discredit the IARC process and exert undue influence at the EPA.