

TED演讲者: Kirsty Duncan | 克丝蒂邓肯

演讲标题: Scientists must be free to learn, to speak and to challenge | 科学家必须要能自由地学习、发言以及挑战

内容概要: "You do not mess with something so fundamental, so precious, as science," says Kirsty Duncan, Canada's first Minister of Science. In a heartfelt, inspiring talk about pushing boundaries, she makes the case that researchers must be free to present uncomfortable truths and challenge the thinking of the day -- and that we all have a duty to speak up when we see science being stifled or suppressed.

克丝蒂邓肯说:「你不能去惹像科学这么根本、这么珍贵的东西。」她是加拿大第一任科学部长。这场暖心也鼓舞人心的演说,谈的是科学的任务:挑战极限。在演说中,她强调研究者必须要能自由地揭示出让人不舒服的真相,并挑战被认为理所当然的思想——且我们都有责任,在看到科学被扼阻或压迫时,大声说出来。

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Let me tell you about rock **snot**.

让我告诉各位关于「石鼻涕」的事。[00:12]

Since 1992, Dr. Max Bothwell, a Government of Canada scientist, has been studying a type of **algae** that grows on rocks.

从 1992 年开始,加拿大政府的科学家 麦斯博斯威尔博士 就开始研究一种 生长在石头上的藻类。[00:18]

Now, the very **unscientific** term for that algae is rock snot, because as you can imagine, it looks a lot like snot.

这种藻类有个很不科学的名称,就是「石鼻涕」,因为,你可以想像得到,它看起来就像是鼻涕。[00:30]

But scientists also call it Didymosphenia geminata and for decades, this algae has been **sliming** up **riverbeds** around the world.

但科学家也称它为双生双楔藻,这数十年来,全世界的海床上出现了 越来越多这种藻类。[00:42]

The problem with this algae is that it is a threat to **salmon**, to trout and the river **ecosystems** it **invades**.

这种藻类有个问题,它会对鲑鱼、鳟鱼构成威胁,亦会入侵河流的生态系统而造成威胁。[00:55]

Now, it turns out Canada's Dr. Bothwell is actually a world expert in the field, so it was no surprise in 2014 when a reporter **contacted** Dr. Bothwell for a story on the algae.

结果发现,加拿大的博斯威尔博士 其实是这个领域的世界级专家,所以,并不意外,在 2014 年 有一名记者联络博斯威尔博士,询问关于这种藻类的故事。[01:05]

The problem was, Dr. Bothwell wasn't allowed to speak to the reporter, because the government of the day wouldn't let him.

问题是,博斯威尔博士 不被允许跟记者交谈,因为当时的政府不让他这么做。[01:23]

snot: n.鼻涕;惹人嫌的人;蛮横无理的话 **algae**: n.[植]藻类;[植]海藻 **unscientific**: adj.不科学的,不符合科学原理的;非学术的;无科学知识的 **sliming**: n.泥浆化/v.用(稀泥、粘液等)涂抹;覆有黏液(slime的现在分词) **riverbeds**: n.河床 **salmon**: n.鲑鱼;大马哈鱼;鲑肉色;鲑鱼肉;橙红色,粉橙色/adj.浅橙色的 **ecosystems**: n.生态系统(ecosystem的复数) **invades**: vt.侵略;侵袭;侵扰;涌入/vi.侵略;侵入;侵袭;侵犯 **contacted**: 交往,接触(contact的过去式和过去分词)

110 pages of emails and 16 government communication experts stood in Dr. Bothwell's way.

有 110 页的电子邮件 及 16 名政府沟通专家 阻挡着博斯威尔博士。[01:35]

Why couldn't Dr. Bothwell speak?

为何博斯威尔博士不能发言? [01:46]

Well, we'll never know for sure, but Dr. Bothwell's research did suggest that climate change may have been responsible for the aggressive algae **blooms**.

我们可能永远不会有肯定的答案,但博威博士的研究确实指出,气候变迁也许是导致 这种藻类快速繁衍的原因。[01:49]

But who the heck would want to **stifle** climate change information, right?

但怎么可能有人想要阻止 关于气候变迁的资讯流出,是吧? [02:03]

Yes, you can laugh.

没错,你可以笑出来。[02:12]

It's a joke, because it is **laughable**.

这是个笑话,因为它是可笑的。[02:13]

We know that climate change is **suppressed** for all sorts of reasons.

我们知道有各式各样的理由 导致气候变迁的资讯被封锁。[02:19]

I saw it **firsthand** when I was a university professor.

我亲自看过,当时我是大学教授。[02:25]

We see it when countries **pull out** of international climate **agreements** like the **Kyoto Protocol** and the **Paris** Accord, and we see it when industry fails to meet its emissions reduction targets.

这样的事会发生在 有国家退出国际气候协议时,像是京都议定书以及巴黎协议;这样的事也会发生在工业无法达成排放减量的目标时。[02:29]

blooms: n.花朵(bloom的复数);[生态]水华/v.开花(bloom的三单形式) **stifle**: vt.扼杀;使窒息;藏匿/vi.窒息;被扼杀/n.(马等的)后膝关节;(马等的)[动]后膝关节病 **laughable**: adj.有趣的,可笑的 **suppressed**: adj.抑制的,发育不全的/v.镇压,禁止(suppress的过去时和过去分词) **firsthand**: adj.直接的;直接采购的;直接得来的/adv.直接地 **pull out**: 离开,撤离;拔出;渡过难关;恢复健康;折叠的大张插页;飞机进场重新飞起 **agreements**: n.[法]协议;同意;[法]契约(agreement的复数形式) **Kyoto**: n.京都(日本城市) **Protocol**: n.协议;草案;礼仪/vt.拟定/vi.拟定 **Paris**: n.巴黎(法国首都); 帕里斯(特洛伊王子)

But it's not just climate change information that's being **stifled**.

但被阻挡的不仅是 关于气候变迁的资讯。[02:45]

So many other scientific issues are **obscured** by **alternate**

有许多其他的科学议题,都被其他替代的事实、假

facts, fake news and other forms of suppression . We've seen it in the United Kingdom, we've seen it in Russia, we've seen it in the United States and, until 2015, right here in Canada.	新闻以及其他形式的压迫给遮掩。[02:50] 我们在英国见过这样的事, 我们在俄国也见过, 我们在美国也见过, 直到 2015 年之前, 在加拿大这里也能见到。[03:02]
In our modern technological age, when our very survival depends on discovery, innovation and science, it is critical , absolutely critical , that our scientists are free to undertake their work, free to collaborate with other scientists, free to speak to the media and free to speak to the public. Because after all, science is humanity's best effort at uncovering the truth about our world, about our very existence.	在现代科技的年代, 我们的生存要仰赖发现、创新, 以及科学, 因此, 很重要的是, 绝对重要的是, 我们的科学家要能自由地 从事他们的研究工作, 自由地和其他科学家合作, 自由地对媒体发言, 自由地对大众发言。[03:15] 因为, 毕竟, 人类在发掘真相上 能做的最大努力, 就是科学, 去发掘我们的世界, 我们存在的真相。[03:42]
stifled : 堵 obscured : adj. 遮蔽的; 湮没的/v. 掩盖; 使含混; 变得模糊(obscure 的过去分词) alternate : vi. 交替; 轮流/vt. 使交替; 使轮流/adj. 交替的; 轮流的/n. 替换物 suppression : n. 抑制; 镇压; [植] 压抑 innovation : n. 创新, 革新; 新方法 critical : adj. 鉴定的; [核] 临界的; 批评的, 爱挑剔的; 危险的; 决定性的; 评论的 collaborate : vi. 合作; 勾结, 通敌 humanity : n. 人类; 人道; 仁慈; 人文学科 uncovering : adj. 露出的; 未覆盖的/v. 发现(uncover 的现在分词); 揭露; 揭开...的盖子; 移去...的覆盖物/n. 露出; 开发; 剥离	
Every new fact that is uncovered adds to the growing body of our collective knowledge. Scientists must be free to explore unconventional or controversial topics.	每发现一项新的事实, 就让我们越来越多的 集体知识又再增长些。[03:54] 科学家必须要能自由地探索 不符合习俗或争议性的主题。[04:03]
They must be free to challenge the thinking of the day and they must be free to present uncomfortable or inconvenient truths, because that's how scientists push boundaries and pushing boundaries is, after all, what science is all about. And here's another point: scientists must be free to fail, because even a failed hypothesis teaches us something.	他们必须要能自由地 挑战每天的想法, 他们必须要能自由地 呈现出让人不舒服 或不方便的真相, 因为科学家得要这么做 才能把界线向外拓展, 毕竟, 科学的重点就是拓展界线。[04:11] 还有另一个重点: 科学家必须要能有失败的自由, 因为即使是失败的假设, 也能教我们一些事。[04:32]
And the best way I can explain that is through one of my own adventures. But first I've got to take you back in time. It's the early 1900s and Claire and Vera are roommates in southern Ontario . One evening during the height of the Spanish flu pandemic , the two attend a lecture together.	我能想出最好的解释方式就是用 我自己的其中一项冒险来当例子。[04:43] 但首先, 我得带各位回到过去。[04:48] 时间是十八世纪初, 克雷儿和薇拉是南安大略的室友。[04:52] 有天晚上, 在西班牙流感大盛行的时候, 她们两人一起去了上课。[05:00]
uncovered : adj. 无覆盖物的; [保险] 未保险的; 无盖的/v. 揭露(uncover 的过去分词); 脱帽致敬; 移去覆盖物 unconventional : adj. 非常规的; 非传统的; 不依惯例的 controversial : adj. 有争议的; 有争论的 inconvenient : adj. 不便的; 打扰的 hypothesis : n. 假设 Ontario : n. 安大略湖(北美五大湖之一) Spanish : adj. 西班牙的; 西班牙语语的; 西班牙人的/n. 西班牙语; 西班牙人 pandemic : adj. (疾病等) 全国流行的; 普遍的/n. 流行性疾病	
The end of the evening, they head for home and for bed. In the morning, Claire calls up to Vera and says she's going out to breakfast. When she returns a short while later, Vera wasn't up. She pulls back the covers and makes the gruesome discovery. Vera was dead. When it comes to Spanish flu, those stories are common, of lightning speed deaths.	晚上结束后, 她们回家准备睡觉。[05:08] 早上, 克雷儿对薇拉喊, 说她要出门去吃早餐。[05:12] 没多久, 她回来时, 薇拉仍然没起床。[05:18] 她把盖被掀起, 发现了可怕的事。[05:24] 薇拉死了。[05:30] 谈到西班牙流感, 那样的故事很常见, 死亡发生得非常快速。[05:34]
Well, I was a professor in my mid-20s when I first heard those shocking facts and the scientist in me wanted to know why and how. My curiosity would lead me to a frozen land and to lead an expedition to uncover the cause of the 1918 Spanish flu. I wanted to test our current drugs against one of history's deadliest diseases. I hoped we could make a flu vaccine that would be effective against the virus and mutation of it, should it ever return.	当我二十五岁左右, 担任教授时, 我第一次听到那些让人震惊的事实, 我心中的那个科学家想要知道 为什么发生、怎么发生的。[05:42] 我的好奇心引导我到一片冰冻之地, 去领导一项考察, 打算找出 1918 年 西班牙流感的成因。[05:54] 我想要测试我们目前的药品能不能 对抗历史上最致命的疾病之一。[06:05] 我希望我们能做出流感疫苗, 来有效对抗病毒 以及病毒的变种。以免哪天这种病毒又再出现。[06:12]
head for : 前往; 出发; 取向于 gruesome : adj. 可怕的; 阴森的 lightning : adj. 闪电的; 快速的/n. 闪电/vi. 闪电 expedition : n. 远征; 探险队; 迅速 deadliest : adj. 最致命的 vaccine : n. 疫苗; 牛痘苗/adj. 疫苗的; 牛痘的 mutation : n. [遗] 突变; 变化; 元音变化	
And so I led a team, a research team, of 17 men from Canada, Norway, the United Kingdom and the United States to the Svalbard Islands in the Arctic Ocean.	所以, 我带着一个研究团队, 成员有 17 人, 来自加拿大、挪威、英国, 以及美国, 目的地是北冰洋的斯瓦群岛。[06:24]

These islands are between Norway and the North Pole. We exhumed six bodies who had died of Spanish flu and were buried in the permafrost and we hoped the frozen ground would preserve the body and the virus. Now, I know what you are all waiting for, that big scientific payoff . But my science story doesn't have that spectacular Hollywood ending. Most don't. Truth is, we didn't find the virus, but we did develop new techniques to safely exhume bodies that might contain virus. We did develop new techniques to safely remove tissue that might contain virus. And we developed new safety protocols to protect our research team and the nearby community. exhumed : v.掘出;恢复(exhume的过去式) permafrost : n.永久冻土,永久冻地;永久冻结带;永久冰冻 preserve : vt.保存;保护;维持;腌;禁猎/n.保护区;禁猎地;加工成的食品 payoff : n.报酬;结果;发工资;结算/adj.支付的;决定性的;产生结果的 protocols : n.协议;礼仪礼节;条款(protocol的复数)/v.拟定议定书;拟定草案(protocol的三单形式)	这些岛屿位在挪威和北极之间。[06:41] 我们挖掘出六具尸体,都是死于西班牙流感,被埋在永久冻土层中,我们希望冰冻的地面能够保存尸体和病毒。[06:45] 我知道各位在等着听什么,科学的大报酬。[06:59] 但我的科学故事并没有 壮丽的好莱坞结局。[07:06] 大部分故事都没有。[07:12] 事实是,我们没有找到病毒,但我们确实开发了新技术,能够安全地挖掘出 可能含有病毒的尸体。[07:14] 我们确实开发了新技术,能够安全地移除 可能含有病毒的组织。[07:26] 我们也开发了新的安全协定,来保护我们的研究团队 和邻近的社区部落。[07:35]
We made important contributions to science even though the contributions we made were not the ones originally intended. www.XiYuSoft.com	我们对科学有重要的贡献,就算我们的贡献 并不是原本期望的那样。[07:44]
In science, attempts fail, results prove inconclusive and theories don't pan out . In science, research builds upon the work and knowledge of others, or by seeing further, by standing on the shoulders of giants, to paraphrase Newton . The point is, scientists must be free to choose what they want to explore, what they are passionate about and they must be free to report their findings. You heard me say that respect for science started to improve in Canada in 2015. How did we get here? What lessons might we have to share? Well, it actually goes back to my time as a professor. I watched while agencies , governments and industries around the world suppressed information on climate change. contributions : n.贡献;出资 inconclusive : adj.不确定的;非决定性的;无结果的 pan out : 成功;结果(是);证明 paraphrase : n.释义;解释;意译/vt.释义 Newton : n.牛顿(英国科学家);牛顿(力的单位) passionate : adj.热情的;热烈的;激昂的;易怒的 agencies : n.代理;代理处(agency的复数)	锡育软件 在科学中,尝试可能会失败,实验结果可能不一致,理论不见得会有结果。[07:55] 在科学中,研究是以他人的研究 及知识为基础,层迭上去,或是要站在巨人的肩膀上,看得更远,这是改述牛顿的说法。[08:04] 重点是,科学家必须要能自由地 选择他们想要探究什么、他们对什么有热忱,他们必须要能自由地报告他们的发现。[08:18] 你们刚听到我说,在加拿大,对科学的尊重,从2015年开始改善。[08:33] 我们如何走到这一步的? [08:40] 我们有什么可以分享的教训? [08:42] 这就要回溯到 我还在当教授的时候了。[08:46] 我看到全世界的 机关、政府组织、产业 都在压制关于气候变迁的资讯。[08:50]
It infuriated me. It kept me up at night. How could politicians twist scientific fact for partisan gain? So I did what anyone appalled by politics would do: I ran for office, and I won. (Applause) I thought I would use my new platform to talk about the importance of science. It quickly became a fight for the freedom of science. After all, I was a scientist, I came from the world under attack, and I had personally felt the outrage . I could be a voice for those who were being silenced . But I quickly learned that scientists were nervous, even afraid to talk to me. One government scientist, a friend of mine, we'll call him McPherson, was concerned about the impact government policies were having on his research and the state of science deteriorating in Canada. infuriated : adj.激怒的;感到愤怒的/v.激怒(infuriate的过去分词) partisan : adj.党派的;效忠的;偏袒的;盲目推崇的/n.游击队;虔诚信徒;党羽 appalled : adj.惊骇的;丧胆的 outrage : n.愤怒;愤慨;暴行;侮辱/vt.凌辱;强奸;对...施暴行;激起愤怒 silenced : adj.无声的;装了消音器的/v.使沉默(silence的过去分词形式);使安静 deteriorating : v.退化,恶化(deteriorate的ing形式)	我感到非常生气。[09:00] 我晚上睡不着觉。[09:03] 政治人物怎么能够为了 党派利益而扭曲科学事实? [09:05] 所以我做了任何对政治 感到胆寒的人都会做的事:我去竞选,且赢了。[09:13] (掌声) 我心想,我要用我的新平台,来谈论科学的重要性。[09:21] 它很快就变成了 为科学自由打的一场仗。[09:34] 毕竟,我是个科学家,我来自受到攻击的世界,且我个人感到很愤怒。[09:40] 我能够为那些 被禁止发声的人发声。[09:50] 但我很快就发现,科学家很紧张,他们甚至不敢跟我交谈。[09:55] 有一位政府科学家,也是我的朋友,我们就称他为麦克弗森,他很担心政府政策 对他的研究会造成什么影响,以及对加拿大的科学 恶化状况会有什么影响。[10:02]
He was so concerned, he wrote to me from his wife's email	他非常担心,所以写信给我,还用他太太的信箱寄

account because he was afraid a phone call could be traced.	信, 因为他担心电话会被追踪。[10:20]
He wanted me to phone his wife's cell phone so that call couldn't be traced.	他要我打到他太太的手机, 这样电话才不会被追踪。[10:30]
I only wish I were kidding.	我真希望我是在开玩笑。[10:37]
It quickly brought what was happening in Canada into sharp focus for me.	很快地, 在加拿大 发生的事成了我的焦点。[10:41]
How could my friend of 20 years be that afraid to talk to me?	我二十年的老友怎么可能 会害怕跟我说话? [10:47]
So I did what I could at the time.	所以, 我做了我当时能做的。[10:53]
I listened and I shared what I learned with my friend in Parliament , a man who was interested in all things environment, science, technology, innovation.	我倾听, 并把我所知道的事 和我在国会的朋友分享, 这位朋友很关心所有 关于环境、科学、科技、创新的事。[10:55]
And then the 2015 election rolled around and our party won.	接着, 2015 年选举又来了, 我们的党赢了。[11:11]
And we formed government.	我们组成了政府。[11:19]
And that friend of mine is now the Prime Minister of Canada, Justin Trudeau.	我的那位朋友 现在是加拿大的总理, 贾斯汀杜鲁道。[11:21]
(Applause) And he asked if I would serve as his Minister of Science.	(掌声) 他问我是否愿意担任 他的科学部长。[11:28]
Together, with the rest of the government, we are working hard to restore science to its rightful place.	我们和整个政府一起努力, 想要恢复科学应有的地位。[11:38]
Parliament: n. 议会, 国会 serve as: 担任..., 充当..., 起...的作用 rightful: adj. 合法的; 正当的; 公正的; 正直的	
I will never forget that day in December 2015 when I proudly stood in Parliament and proclaimed , "The war on science is now over."	我永远无法忘记 2015 年 12 月的那一天, 当时我很骄傲地站在国会里, 做出声明: 「科学的战争现在结束了。」 [11:47]
(Applause) And I have worked hard to back up those words with actions.	(掌声) 我们很努力用实际行动 来支持那项声明。[12:02]
We've had many successes.	我们获得许多成功。[12:12]
There's still more work to do, because we're building this culture shift.	还有很多需要去做的, 因为我们在做的是文化转移。[12:14]
But we want our government scientists to talk to the media, talk to the public.	但我们希望我们的政府科学家 能和媒体交流和大众交流。[12:20]
It'll take time, but we are committed.	这需要时间, 但我们很投入。[12:26]
After all, Canada is seen as a beacon for science internationally .	毕竟, 在国际社会中, 加拿大被视为科学的灯塔。[12:30]
And we want to send a message that you do not mess with something so fundamental, so precious, as science.	我们想要传递一个讯息, 你不能去惹像科学这么根本、这么珍贵的东西。[12:36]
So, for Dr. Bothwell, for Claire and Vera, for McPherson and all those other voices, if you see that science is being stifled, suppressed or attacked, speak up .	所以, 为了博斯威尔博士, 为了克雷儿和薇拉, 为了麦克弗森, 以及其他声音, 如果你们发现科学 被扼阻、压迫或攻击, 请大声说出来。[12:49]
If you see that scientists are being silenced, speak up.	如果你们发现科学家 被禁止发声, 请大声说出来。[13:05]
proudly: adv. 傲慢地, 自负地; 得意洋洋地 proclaimed: 公告 internationally: adv. 国际性地; 在国际间 mess with: 同...一起用膳; 胡乱摆弄; 干扰; 与...厮混在一起 speak up: 更大声地说; 无保留地说出	
We must hold our leaders to account.	我们必须让我们的 领导人负起责任。[13:11]
Whether that is by exercising our right to vote, whether it is by penning an op-ed in a newspaper or by starting a conversation on social media, it is our collective voice that will ensure the freedom of science.	不论是以行使投票权的方式, 或是在报纸上的专栏写文章, 或是在社交媒体上 开启一段对谈, 都可以, 若要确保科学的自由, 需要我们集体的声音才能办到。[13:15]
And after all, science is for everyone, and it will lead to a better, brighter, bolder future for us all.	毕竟, 科学是属于每个人的, 它会为我们所有人带来一个 更美好、明亮、无畏的未来。[13:34]
Thank you.	谢谢。[13:45]
(Applause)	(掌声) [13:46]
exercising: n. 行使; 锻炼; 运动健身 / v. 运动; 运用 (exercise 的 ing 形式); 练习 penning: n. 石块铺砌 / v. 把...围入栏圈; 关押 (pen 的 ing 形式) op-ed: abbr. (美) (报纸的) 专栏版, 特写稿版 (opposite editorial page) lead to: 导致; 通向	

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