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## **Purdue Research Integrity Committee Fabricates Allegations**

By Steven B. Krivit

**[SERIES INTRODUCTION:** *This article is part of a series about the scientific work of [five researchers](#)\* on a team led by Rusi Taleyarkhan, a professor in the Purdue School of Nuclear Engineering, and the politics surrounding their research. The team is one of several groups that, for several decades, has been investigating and attempting to achieve acoustic inertial confinement fusion. The team is the first to claim success. It calls its version of this research bubble fusion.*

*First place is not always an enviable place to be, and in this case, one member of the group, Taleyarkhan, (but not his collaborators) has been singled out for political attack by competitors from outside institutions as well as adversaries in his own university—in particular, the former head of the school, Lefteri Tsoukalas. According to sources in the School of Nuclear Engineering, Tsoukalas was asked to resign as head of the school, and he is in Greece on sabbatical. Taleyarkhan has since filed a civil complaint against Tsoukalas and others for a variety of claims, including damaging remarks by Tsoukalas and another Purdue professor that were published in Nature.*

*Besides removing Tsoukalas as the head of the school, the Purdue administration has, according to the group, deprived Taleyarkhan of his right to due process and punished him with charges the group calls "trumped up."*

*The Purdue administration and even Congress conducted several investigations of Taleyarkhan (no investigations have targeted the other members of his group). The first few probes came up empty-handed. But when pushed by Congress to reinvestigate, Purdue eventually came up with two charges that have - thus far - stuck. The charges, as reported in another article in this series, appear to have been fabricated.*

*Public court documents reveal a dysfunctional school of engineering at Purdue and suggest that Purdue administrators have attempted to make Taleyarkhan a scapegoat in order to avoid further public scrutiny. It looks like a cover-up. This is Bubblegate.*

*New Energy Times is publishing key aspects of our investigation into this matter as we learn them. The [Bubblegate Portal](#) provides easy access for the collection of our evolving investigation on Bubblegate.*

*\* JaeSeon Cho (formerly with Oak Ridge National Laboratory), Robert C. Block (Rensselaer Polytechnic Institute), Richard T. Lahey Jr. (Rensselaer Polytechnic Institute), Robert I. Nigmatulin (Russian Academy of Sciences) and Colin West (formerly with Oak Ridge National Laboratory)]*

This report presents a brief overview of the most recent of the Purdue investigations, the one which found Taleyarkhan guilty of research misconduct on two counts.

Investigations into research misconduct at Purdue University are guided by "*Purdue University, Office Of The President, Executive Memorandum No. C-22, September 6, 1991.*"

### [C-22 Memorandum](#)

An investigation, as described by C-22, has two major phases:

1. Inquiry is a process of information gathering and initial fact-finding to determine whether an allegation or apparent instance of research misconduct warrants an investigation.
2. Investigation is the formal examination and evaluation of all relevant facts to determine whether research misconduct has occurred.

C-22 describes a specific process for handling allegations. It begins with the written presentation of allegations to the school dean. This precedes, and triggers, the official inquiry.

The processing of Taleyarkhan's C-22 allegations included four steps:

1. (Leading up to Aug. 27, 2007) The Inquiry Committee collected 34 specific allegations. These 34 allegations are listed in the "*Aug. 27 2007 Purdue University Final Report of C-22 Inquiry Committee - Appendix B.*"

### [Appendix B - Inquiry Committee Report](#) [Original Scan of Appendix B](#)

2. (Aug. 27, 2007) Of these 34 allegations, the Inquiry Committee dismissed 22. On Aug. 27, the Inquiry Committee recommended that an Investigation Committee form to consider whether any of the 12 remaining allegations constituted misconduct.

### [Tabulation of Forwarded Allegations](#)

3. (Nov. 1, 2007) The Investigation Committee was formed and charged with the task of evaluating the 12 allegations put forward by the Inquiry Committee.

### [Investigation Committee Charge Letter](#)

4. (April 18, 2008) The Investigation Committee reorganized, aggregated and renumbered the 12 allegations forwarded from the Inquiry Committee into nine allegations. The Investigation Committee concluded that Taleyarkhan was guilty of two of these nine allegations.

The 12 allegations of research misconduct forwarded from the Inquiry Committee (C2, C3, C5, C6, D2, D3, F2, G2, K1, L1, E1, E3) were dismissed. However, in the "reorganizing" process, the two allegations of which they found Taleyarkhan guilty (A.2 and B.2) were new. They first appear on Pages 4 and 5 in the Investigation Committee Report.

### [Investigation Committee Report](#)

Let's examine the first allegation Taleyarkhan was charged with, listed in the Investigation Committee Report as A.2.

This allegation says that Taleyarkhan caused Adam Butt's name to be added to Yiban Xu's paper in an effort to show independent replication. Allegation A.2 also states that Butt did not contribute significantly to the paper.

Here is how Purdue explained the origin of A.2. On Page 4 of the Investigation Committee Report, the committee stated, "For the sake of clarity, the Investigation Committee has aggregated and restated some of the allegations, while cross-referencing the underlying Inquiry Committee numeration of those allegations."

### [Cross Reference of Allegations](#)

If you go to Page 7 in the Investigation Committee Report, you will see how the

Investigation Committee cross-referenced their new allegations A.1 and A.2 to the Inquiry Committee allegations C2 and D2.

If you look at Page 2 of Appendix B of the Inquiry Committee Report, you will see C2 and D2 as follows:

Allegation C2: "Taleyarkhan intentionally left his name off the publication in order to create a misleading impression of independent confirmation of sonofusion. Source: Suslick"

Allegation D2: "Taleyarkhan intentionally left his name off the publication in order to create a misleading impression of independent confirmation of sonofusion. Source: Suslick"

Kenneth Suslick is a chemist at the University of Illinois who has been working on a different method of acoustic inertial confinement fusion research. Suslick has been very public about his accusations (including fraud) against Taleyarkhan.

Then go to Page 12 in the Investigation Committee Report to see how the committee "aggregated and restated" Allegations C2 and D2 into A.2.

Allegation A.2: "Dr. Taleyarkhan with falsifying intent caused Mr. Adam Butt's name to be added to the author bylines of the papers even though Mr. Butt was not a significant contributor to the experiments, the data analyses, or the writing of the manuscripts."

Not only does A.2 not match C2 and D2, if you go back to Appendix B of the Inquiry Committee Report, there is no reference, in any form, to either part of allegation A.2. Allegation A.2 did not exist; it was fabricated.

Here is how A.2 was manufactured. The committee first took Suslick's allegation and amplified it to include the legal language "falsifying intent." Second, it changed Suslick's statement from "left his name off the publication" to "caused Mr. Adam Butt's name to be added," and third, it introduced an opinion, "not a significant contributor," about Butt's involvement with regard to the paper.

Now let's take a close look at the second new allegation against Taleyarkhan by the Investigation Committee, listed on Page 5 of the Investigation Committee Report and identified as B.2. This allegation says that Taleyarkhan, "with falsifying intent," stated in his 2006 *Physical Review Letters* paper that his 2002 *Science* paper had been "independently confirmed."

If you go to Page 15 in the Investigation Committee Report, you will see how the committee cross-referenced its new allegation B.2 to the Inquiry Committee allegations C3, C5, D3 and L1.

If you look at Page 2 of Appendix B of the Inquiry Committee Report, you will see C3, C5 and D3 as follows:

Allegation C3: "Taleyarkhan managed the generation of the research reported in the Nuclear Engineering and Design paper. Source: Tsoukalas"

Allegation C5: "(Nuclear Engineering and Design paper) Taleyarkhan manipulated the press characterization of the Xu research to create a misleading appearance of independent supervision by Tsoukalas. Source: Tsoukalas"

Allegation D3: "(International Topical Meeting on Nuclear Reactor Thermal Hydraulics paper) Taleyarkhan manipulated the press characterization of the Xu research to create a misleading appearance of independent supervision by Tsoukalas. Source: Tsoukalas"

If you look at Page 3 of Appendix B of the Inquiry Committee Report, you will see L1 as follows:

Allegation L1: "Taleyarkhan falsely cited the Xu publications as an independent confirmation

of sonofusion. Source: Suslick."

Then go to Page 12 in the Investigation Committee Report to see how the committee "aggregated and restated" Allegations C3, C5, D3 and L1 into B.2.

**Allegation B.2:** "Dr. Taleyarkhan with falsifying intent stated in the opening paragraph of his paper in *Physical Review Letters* **96**:034301 (2006) that "these observations [referring to *Science* **295**:1868 (2002)] have now been independently confirmed."

Again we have a case of manipulation. As with allegation A.2, new language is introduced - incriminating legal language - "falsifying intent." Also, Inquiry Committee allegations C5 and D3 have been reworded significantly from referring to "press characterization" to "opening paragraph of his paper in *Physical Review Letters*."

Investigation Committee allegation B.2 doesn't look anything like Inquiry Committee allegation C3, C5, D3 and L1. That's because it didn't come from them. It came from Inquiry Committee allegation F3.

**Allegation F3:** "Publication: R. P. Taleyarkhan et al., Nuclear Emissions During Self-Nucleated Acoustic Cavitation, *Physical Review Letters* **96**, 034301 (2006). In January 2006, after spectrum analysis was conducted allegedly proving his use of <sup>252</sup>Cf, Taleyarkhan published fabricated and/or false scientific statements in his PRL introduction. "Previously, we have provided evidence [1(a), 2-4] for 2.45 MeV neutron emission and tritium production during external neutron-seeded cavitation experiments with chilled deuterated acetone, and these observations have now been independently confirmed [5]." Taleyarkhan intentionally left his name off of the Xu publications in order to create a misleading impression of independent confirmation of sonofusion. Source: Suslick; ONR; Tsoukalas"

Note that the specific source of the Office of Naval Research allegations is not identified. ONR permits allegations from anonymous sources, not necessarily from within ONR, though ONR's process does not provide the accused the right to know the identity of such sources.

Allegation F3 was dismissed by the Inquiry Committee and thus not submitted to the Investigation Committee, but somehow it reappeared in the Investigation Committee Report. Not only did it reappear, but it also was erroneously attributed to C3, C5, D3 and L1 instead of to F3.

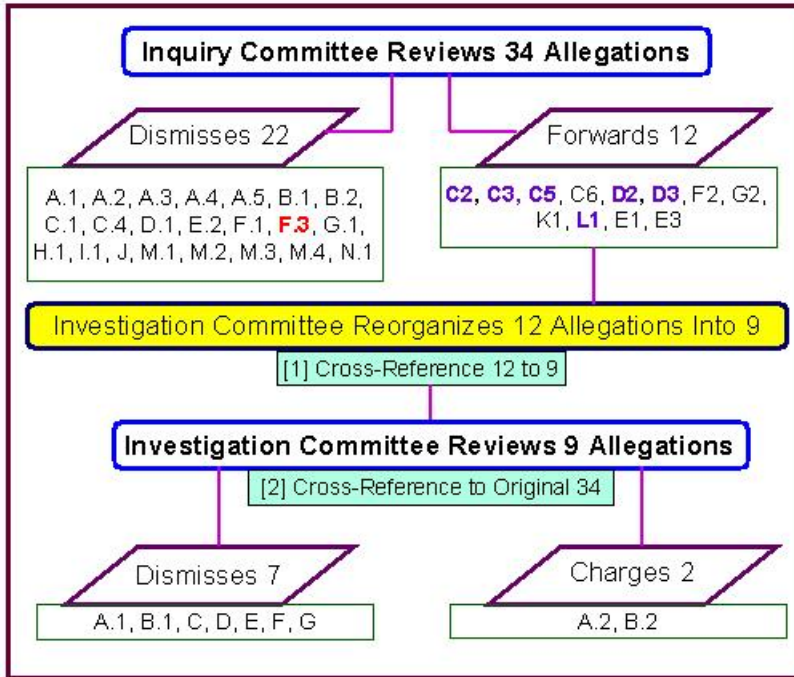
The Investigation Committee, which has charged Taleyarkhan with "falsifying intent," couldn't attribute B.2 to its real source, F3; otherwise, it would have been obvious that the Inquiry Committee had dismissed it.

The focus of this article has been only the manipulation of the allegations from the Inquiry Committee to the Investigation Committee. Although the allegations seem invalid from a procedural point of view, a future article will investigate directly the facts that relate to allegations A.2 and B.2.

Based on the information obtained from the inquiry and investigation committee documents, the two counts of research misconduct in the "*April 18, 2008 Purdue University Final Report of C-22 Investigation Committee*" have been fabricated by the Investigation Committee or a person or people working with the committee. Because this violates Taleyarkhan's right to due process, this fact alone invalidates them.

## How Purdue Fabricated the Allegations

Bubblegate Investigation by New Energy Times



Cross-Reference of Charged Allegations			
Allegations as They Were Labeled per Committee			
	Inquiry Comm.		Investigation Comm.
Stated	<b>C2, D2</b>	➔	A.1 (Dismissed) A.2 (Charged)
Actual	<b>C2, D2</b>	➔	A.1 (Dismissed)
Actual	<b>Did Not Exist</b>	➔	<b>A.2 (Charged)</b>
Stated	<b>C3, C5, D3, L1</b>	➔	B.1 (Dismissed)
		➔	B.2 (Charged)
Actual	<b>C3, C5, D3, L1</b>	➔	B.1 (Dismissed)
Actual	<b>F3 (Dismissed)</b>	➔	<b>B.2 (Charged)</b>

[1] Cross-Reference 12 to 9

[2] Cross-Reference to Original 34

New Energy Times left phone messages for Purdue professor Mark A. Hermodson, chairman of the C-22 Investigation Committee, and sent e-mails to Hermodson and France A. Córdoba, Purdue president.



Mark A. Hermodson



France A. Córdoba

*New Energy Times* also sent copies to the Purdue Board of Trustees, Holly Adams of the Office of Naval Research, Daniel Kulp of the American Physical Society and other journalists who have been following the Purdue story.

The e-mail informed Hermodson and Córdoba that, according to our investigation, Purdue, under their direction and authority, respectively, fabricated two allegations, A.2 and B.2, against Rusi Taleyarkhan.

*New Energy Times* requested comments from Hermodson and Córdoba and offered to provide them with a draft of this article and the underlying data we obtained in this investigation.

*New Energy Times* also spoke with Jenny Jones in Córdoba's office this morning to alert her of the e-mail. We also faxed the request for comment immediately after the phone call with Jones.

As we go to press, Hermodson and Córdoba have failed to respond.

Other members of the C-22 investigation committee are Mary Ellen Bock of Purdue, Charles Kennel of the University of California, San Diego, James Kolata of the University of Notre Dame, Don Miller of Ohio State University and John Schiffer of Argonne National Laboratory.

The committee received administrative support from Peter E. Dunn, Purdue's research integrity officer, and counsel from William Kealey, of the law firm Stuart and Branigin LLP.

[\*\*COMMENT ON THIS STORY\*\*](#)