

**IN THE UNITED STATES DISTRICT COURT**  
**FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

**UNITED STATES OF AMERICA** : **CRIMINAL NO.** \_\_\_\_\_  
**v.** : **DATE FILED:** \_\_\_\_\_  
**YUJIE DING** : **VIOLATIONS:**  
**YULIYA ZOTOVA,** : **18 U.S.C. § 1343 (wire fraud – 10 counts)**  
**a/k/a "Ioulia Zotova"** : **Notice of forfeiture**

**INDICTMENT**

**COUNTS ONE THROUGH TEN**

**(Wire Fraud)**

**THE GRAND JURY CHARGES THAT:**

1. At all times relevant to this indictment, defendant YUJIE DING was a professor of electrical and computer engineering at a university in the Eastern District of Pennsylvania known to the grand jury (the "University"). As part of his work at the University, defendant DING had control over certain laboratories at the University, and supervised various students conducting research in those laboratories.

2. On or about December 2, 2002, defendant YUJIE DING married defendant YULIYA ZOTOVA. At all times relevant to this indictment, defendants DING and ZOTOVA lived in the Eastern District of Pennsylvania.

3. Beginning in or about 2003, defendants YUJIE DING and YULIYA ZOTOVA purported to run a company called "ArkLight" from their home. Although sometimes called "ArkLight Inc.," ArkLight was organized as a sole proprietorship, and was not incorporated.

4. On or about May 8, 2003, defendant YULIYA ZOTOVA registered "ArkLight" as a fictitious name with the Corporations Section of the Commonwealth of

Pennsylvania Department of State. On the registration form, defendant ZOTOVA listed herself as "president" of ArkLight.

5. Sometime in or before April 2006, a bank business checking account for ArkLight was opened with defendant YULIYA ZOTOVA named as the authorized signer on the account.

6. At all times relevant to this indictment, the National Aeronautics and Space Administration ("NASA") was an agency within the executive branch of the United States government.

#### **THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM**

7. In 1982, Congress established the Small Business Innovation Research ("SBIR") program. A main purpose of the SBIR program is to increase opportunities for small businesses to participate in research and development that has potential for commercialization, and thereby foster and stimulate innovation.

8. In order to receive a research grant through the SBIR program, the recipient must qualify as a "small business concern," as defined by Small Business Administration regulations. Among other things, to qualify for SBIR funding, the recipient must have no more than 500 employees, 13 C.F.R. § 121.702(c), and must be organized for profit. 13 C.F.R. § 121.105.

9. Various government departments and agencies, including NASA, fund research conducted by small business concerns by participating in the SBIR program. Once a year, NASA issues a solicitation for SBIR proposals on various topics of interest to NASA as the sponsoring agency.

10. The SBIR program includes three development phases, called Phase I, Phase II and Phase III. In order to receive funding in Phase I or Phase II, a small business concern must submit a proposal, in which it outlines a research project that it is offering to undertake, relating to a topic chosen by the sponsoring agency.

11. Phase I provides funding to evaluate the scientific and technical merit of the awarded proposal, typically over a six-month period.

12. Phase II provides funding to further and expand selected Phase I research projects, typically over a two-year period. A small business concern applying for Phase II funding must have completed a successful Phase I project, but not all successful Phase I projects move to Phase II.

13. Phase III is used to commercialize the innovations funded in Phase II, using non-SBIR government funding.

14. The SBIR program requires each funded project to have a principal investigator who is the leader of the research. Accordingly, an SBIR proposal must name the proposed principal investigator.

15. A proposal for SBIR funding also must contain the technical objectives of the research endeavor, and may also contain a work plan, specifying the pathway for achieving the technical objectives.

16. A proposal for SBIR funding also must contain a budget, setting forth how the requested funds will be allocated to carry out the proposed research effort.

17. Once the awarding government agency selects a proposed research project for SBIR funding, the proposal typically becomes incorporated into the contract.

18. A small business concern that receives funding for a Phase I SBIR project is permitted to subcontract up to one third of the work to an outside person or entity. For Phase II SBIR projects, a small business concern is permitted to subcontract no more than half of the funded project.

### **THE SCHEME**

19. From in or about August 2009, until in or about May 2013, in the Eastern District of Pennsylvania and elsewhere, defendants

**YUJIE DING and  
YULIYA ZOTOVA,  
a/k/a "Ioulia Zotova,"**

devised and intended to devise a scheme and artifice to defraud NASA, and to obtain money and property by means of false and fraudulent pretenses, representations, and promises.

### **MANNER AND MEANS**

It was part of the scheme that:

20. Starting no later than August 2009, defendants YUJIE DING and YULIYA ZOTOVA used their purported business, ArkLight, to seek, from NASA, SBIR funding for research projects aimed at creating a device (a "single photon detector") to detect trace levels of chemicals, such as CO<sub>2</sub>, in the atmosphere or other media.

21. It was part of the scheme that defendants YUJIE DING and YULIYA ZOTOVA caused ArkLight to submit certain research proposals to NASA in response to NASA's SBIR Program solicitation for 2009. The proposals, defined more fully below, are referred to as the Phase I Proposal and the Phase II Proposal.

22. It was part of the scheme that, in the Phase I Proposal and the Phase II Proposal, ArkLight claimed that it would perform and conduct proposed research under the leadership of defendant ZOTOVA, and that ArkLight would subcontract an allowable percentage of

the work to the University, to be carried out by defendant YUJIE DING at his University laboratory. In fact, as defendants DING and ZOTOVA well knew, ArkLight had no facilities; defendants DING and ZOTOVA were using ArkLight as a front to funnel federal grant money to defendants DING and ZOTOVA for research performed solely by students and others working in defendant DING's University laboratory, under defendant DING's supervision.

23. It was part of the scheme that, when ArkLight was preparing the Phase I and Phase II Proposals, defendant YUJIE DING provided a draft "subcontract" to Person #1, known to the grand jury, who was an administrative employee at the University's Office of Research and Sponsored Programs.

24. It was part of the scheme that each of the subcontracts contained a "scope of work" that outlined the research tasks that the University would perform under the subcontract. Defendant YUJIE DING decided, among other things, the amount and cost of the labor that would be required to complete the University's scope of work.

25. After checking each subcontract, Person #1 then forwarded the subcontract to ArkLight, to an email address that had been provided for defendant YULIYA ZOTOVA. Unbeknownst to the University or to NASA, the scope of work in each of the subcontracts actually called for the University to perform the entire research endeavor.

26. It was part of the scheme that, in or about September 2009, defendants YUJIE DING and YULIYA ZOTOVA caused ArkLight to submit a Phase I proposal for \$100,000 SBIR funding to NASA, titled "Frequency Up-Conversion Detection System with Single Photon Sensitivity within 1-1.8  $\mu\text{m}$  and 3-4  $\mu\text{m}$  for ASCENDS Mission: A Novel Approach to Lidar" (hereinafter, the "Phase I Proposal").

27. The Phase I Proposal budgeted \$33,333 (one third of the requested funding) for a subcontract to the University. The budget also stated that ArkLight would pay more than \$50,000 for its employee wages, and that ArkLight would make no profit. The Phase I Proposal listed defendant YULIYA ZOTOVA as the principal investigator, and stated, among other things, that she would "plan and direct the entire project; lead it technically and make substantial personal contributions during its implementation . . . Dr. Zotova will closely work with [two University] graduate students. In particular, she will design all the experiments and supervise all the experimental activities of these two graduate students on a daily basis."

28. The Phase I Proposal was awarded SBIR funding in the full amount requested, and was incorporated into a contract designated NNX10CE97P (the "97P Contract"), on or about January 29, 2010. According to the Final Report for the 97P Contract, the research was conducted from January 29, 2010 to July 29, 2010.

29. It was part of the scheme that, in or about July 2010, defendants YUIJIE DING and YULIYA ZOTOVA caused ArkLight to submit a Phase II proposal, titled "Frequency Up-Conversion Detection System with Single Photon Sensitivity within 1-1.8  $\mu\text{m}$  and 3-4  $\mu\text{m}$  for ASCENDS Mission: A Novel Approach to Lidar," for \$600,000 SBIR funding to NASA (the "Phase II Proposal"), to further the research that was being conducted under the 97P Contract.

30. The Phase II Proposal budgeted \$300,000 (half of the requested funding) for a subcontract to the University. The budget also stated that ArkLight would pay more than \$200,000 for its employee wages, and that ArkLight would make no profit. The Phase II Proposal listed defendant YULIYA ZOTOVA as the principal investigator, and stated, among other things, that she would "plan and direct the entire project; lead it technically and make major personal contributions during its implementation . . . Dr. Zotova will closely work with the graduate student

and postdoctoral fellow under the support. In particular, she will design all the experiments, supervise, and conduct all the experimental activities on a daily basis."

31. The Phase II Proposal was awarded SBIR funding in the full amount requested, and was incorporated into a contract designated NNX11CB80C (the "80C Contract"), on or about May 26, 2011.

32. It was part of the scheme that ArkLight did not perform the required amount – or, in fact, any – of the work for the 97P or 80C Contracts, and defendant YULIYA ZOTOVA did not carry out the responsibilities of principal investigator. Instead, after SBIR funding was approved, defendant YUJIE DING caused the University to do all of the research work on Phase I for one third of the money, and all of the research work on Phase II for one half of the money, using graduate students and others working under defendant DING's supervision.

33. NASA paid money for the 97P and 80C Contracts directly into ArkLight's business checking account.

34. It was part of the scheme that, in order to receive payment, defendants YUJIE DING and YULIYA ZOTOVA caused ArkLight to submit certifications to NASA that, among other things, the primary employment of the principal investigator was with ArkLight, and that ArkLight had not exceeded the subcontractor limits required under each of the 97P and 80C Contracts.

35. It was part of the scheme that defendants YUJIE DING and YULIYA ZOTOVA periodically wrote checks to themselves drawn on the ArkLight business checking account.

36. It was part of the scheme that, in order to burnish her professional credentials, defendant YULIYA ZOTOVA's name appeared as an author on published scientific

papers that had been written by students and others working on research efforts funded with SBIR money. Some of those published scientific papers were then included in defendant ZOTOVA's biographical information in the Phase I Proposal and the Phase II Proposal.

37. It was further part of the scheme that, between 2003 and 2013, defendant YUIE DING actively concealed his affiliation with ArkLight from the University, and concealed from the University's Office of Research and Sponsored Programs the fact that defendant YULIYA ZOTOVA was his wife, and that ArkLight and defendant ZOTOVA were not actually performing work on the 97P and 80C Contracts.

38. Among other things, defendant YUIE DING concealed his relationship to ArkLight by: (a) denying his ownership and control over ArkLight when he was questioned about it, in December 2003, by Person #2, a University official known to the grand jury, and (b) completing Annual Internal Audit Questionnaires that represented that (i) neither defendant DING nor any member of his immediate family held a position with any entity that did, or proposed to do, business with the University; (ii) neither he nor any member of his immediate family received compensation from an entity doing business with the University; and (iii) neither he, nor any member of his immediate family, held a controlling interest in such an entity.

39. Contrary to his representations to the University, defendants YUIE DING and YULIYA ZOTOVA in fact controlled ArkLight, which had various contracts with the University. Defendant ZOTOVA controlled ArkLight's business checking account, and was purportedly an employee of ArkLight. In addition, defendant ZOTOVA wrote checks to herself and to defendant DING from the ArkLight bank account.

40. On or about the dates listed below, in the Eastern District of Pennsylvania and elsewhere, defendants



**YUJIE DING and  
YULIYA ZOTOVA,  
a/k/a "Ioulia Zotova,"**

for the purpose of executing the scheme, and attempting to do so, and aiding and abetting its execution, caused to be transmitted by means of wire communication in interstate commerce the signals and sounds described below, each transmission constituting a separate count:

<b>COUNT</b>	<b>DATE</b>	<b>DESCRIPTION OF WIRE</b>
1	February 17, 2010	electronic transmission of an invoice to NASA for the 97P Contract, for payment of \$30,000, transmitted from Center Valley PA to Sterling VA
2	May 12, 2010	electronic transmission of an invoice to NASA for the 97P Contract, for payment of \$30,000, transmitted from Center Valley PA to Sterling VA
3	August 26, 2010	electronic transmission of an invoice to NASA for the 97P Contract, for payment of \$40,000, transmitted from Center Valley PA to Sterling VA
4	July 15, 2011	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$30,000, transmitted from Coopersburg PA to Sterling VA
5	October 1, 2011	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$70,000, transmitted from Coopersburg PA to Sterling VA
6	June 30, 2012	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$70,000, transmitted from Coopersburg PA to Sterling VA
7	September 29, 2012	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$70,000, transmitted from Coopersburg PA to Sterling VA
8	December 28, 2012	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$70,000, transmitted from Center Valley PA to Sterling VA
9	February 28, 2013	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$40,000, transmitted from Center Valley PA to Sterling VA
10	June 3, 2013	electronic transmission of an invoice to NASA for the 80C Contract, for payment of \$110,000, transmitted from Center Valley PA to Sterling VA

All in violation of Title 18, United States Code, Section 1343.

## **NOTICE OF FORFEITURE**

### **THE GRAND JURY FURTHER CHARGES THAT:**

As a result of the violations of Title 18, United States Code, Section 1343 set forth in this Indictment, defendants

**YUJIE DING and  
YULIYA ZOTOVA,  
a/k/a "Ioulia Zotova,"**

shall forfeit to the United States all property, real or personal, involved in the commission of the offenses and all property traceable to such property.

1. The property to be forfeited includes, but is not limited to, a forfeiture money judgment in the amount of the proceeds of the violations alleged in Counts 1 through 10 of this indictment.

2. If any of the property subject to forfeiture, as a result of any act or omission of the defendant:

- a. cannot be located upon the exercise of the due diligence;
- b. has been transferred to or sold to, or deposited with, a third party;
- c. has been placed beyond the jurisdiction of the Court;
- d. has been substantially diminished in value; or
- e. has been commingled with other property which cannot be subdivided without difficulty,


it is the intent of the United States, pursuant to Title 28, United States Code, Section 2461(c), incorporating Title 21, United States Code, Section 853(p), to seek forfeiture of any other property of the defendant up to the value of the property subject to forfeiture.

All pursuant to Title 28, United States Code, Section 2461(c) and Title 18, United States Code, Section 981(a)(1)(C).

**A TRUE BILL:**

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**GRAND JURY FOREPERSON**

  
**ZANE DAVID MEMEGER**  
**UNITED STATES ATTORNEY**