

# **DOCUMENTATION OF DR. THOMAS DOLAN'S LENR CONTRIBUTIONS AND ACTIVITIES**

*A PROJECT OF THE LENR RESEARCH  
DOCUMENTATION INITIATIVE*

## **Second Draft Report, Volume 1**

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## 1 Introduction

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Cold fusion (CF) was announced on March 23, 1989, by Dr. Martin Fleischman and Dr. Stanley Pons. The immense potential energy benefits of CF (also referred to as Low Energy Nuclear Reactions, LENR) were immediately recognized. Humankind's need for a source of cheap, clean, inexhaustible, and safe energy seemed to be permanently satisfied. However, LENR was rejected by mainstream science within a year or so, and it remains highly marginalized to this day. On the other hand, the phenomenon has continued to be rigorously pursued by many investigators in several countries. The mounting evidence for the reality of LENR shows that its potential benefits may yet be realized.

Because it is a “pariah” science, LENR has attracted relatively few new investigators to the field. Many of the researchers became active in the early months and years after the 1989 announcement. Now 30 years later many of these investigators are leaving the field for retirement or health reasons. The results of their many years of LENR investigation are at risk of being lost, which would be extremely unfortunate not only for the field, but also potentially for humanity.

An initiative is underway by Dr. Thomas Grimshaw's LENRGY LLC to mitigate the risk of loss of research records of LENR investigators. Its objectives are to collect, organize, document, and archive these records. The LENR Research Documentation Initiative (LRDI) assists researchers to ensure that their efforts are preserved and to keep the records available for additional analysis and interpretation. The LRDI is described in an article in *Infinite Energy*<sup>1</sup> and on a dedicated website<sup>2</sup>.

Dr. Tom Dolan (Figure 1-1) was working at Idaho National Energy Laboratory when word came of the upcoming Fleischmann and Pons press conference in March 1989. He and Paul Ritter traveled to the University of Utah and attended the conference. Subsequently, they and several others at INEL ran an electrolytic cell experiment until it was shut down by Lab management in the summer of 1989. Dr. Dolan felt that this decision was based on politics rather than science.

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1 Grimshaw, T., 2020. Documenting Cold Fusion Research: Preserving a Vital Asset for Humankind. *Infinite Energy*, Issue 150, March/April 2020, p. 9-13.

2 LENR Research Documentation Initiative: Collection, Organization, Description, Archiving of LENR Research Records. [www.lenr-documentation.org](http://www.lenr-documentation.org).



*Figure 1-1.*

*Tom Dolan (Right) with Tom Grimshaw  
Photo Taken at ICCF-24, Mountain View, CA, July 30, 2022*

Dr. Dolan nevertheless continued his interest in the LENR and read articles in the field through the 1990s. He attended five International Conferences on Cold Fusion – in 2002 (ICCF-9), 2005 (ICCF-12), 2013 (ICCF-18), 2019 (ICCF-21) and 2022 (ICCF-24). In 2013, he joined with Anthony Zuppero and Paul Crone at Tionesta Applied Research Corporation to provide theoretical support for LENR concepts being investigated at the company. He has several papers with Dr. Zuppero, and a number of LENR-related patents have been applied for by Tionesta.

Dr. Dolan's father (also Thomas J. Dolan) was on the faculty of the University of Illinois at Urbana-Champaign, and Tom was born and raised in Champaign, Illinois. He received a BS degree in Engineering Mechanics at the University and served in the U.S. Navy during the Cuban

Missile Crisis, during which his ship (USS BARRY (DD-933)) dealt directly with one of the Soviet vessels. He received his PhD in Nuclear Engineering, also at the University, and embarked on his long career in nuclear physics. A short version of Dr. Dolan's resume is in Figure 1-2, and a more complete version is in Appendix A.

A project has been undertaken with Dr. Dolan to document his contributions to and activities in the LENR field. The Dolan LENR Contributions Documentation Project (DLCDP) is being performed under the umbrella of the LRDI. The project began with a recorded interview on August 16, 2022. The project methods are described in Section 8 of this report.

The purpose of this report is to present the results of the DLCDP. Future potential work is also proposed, and project performance is discussed.

## **2 Professional Background**

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Dr. Dolan received his PhD in Nuclear Engineering at the University of Illinois at Urbana Champaign and worked in the nuclear field nearly all of his professional life. He has some 60 years of experience and has held senior positions in academia as a professor, international and U S government agencies, and a corporation engaged in energy research. A condensed resume is shown in Figure 2-1, and a full version (13 pages) is in Appendix A<sup>3</sup>.

*Figure 2-1.*

*Condensed Version of Dr. Dolan's Resume*

*(Following Two Pages)*

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<sup>3</sup> Grimshaw, T., 2022. Resumes for the Dolan LENR Research Documentation Project. Memo to Tom Dolan, August 16.

## **Thomas J. Dolan, PhD**

Adjunct Professor

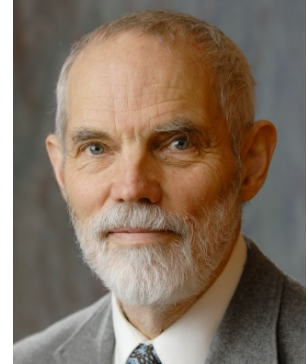
Nuclear, Plasma, and Radiological Engineering Department

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[dolantj@illinois.edu](mailto:dolantj@illinois.edu)

+1-217-369-0489



### **Work experience (roughly chronological order):**

USS BARRY, DD-933 (US Navy)

PhD, Nuclear Engineering, University of Illinois at Urbana-Champaign

Lawrence Livermore National Laboratory

Los Alamos National Laboratory

Novosibirsk State University and Budker Institute of Nuclear Physics, USSR (postdoc)

University of Missouri-Rolla

INRS-Energie, Université du Québec, Canada

Tsinghua University, Taiwan

Oak Ridge National Laboratory

Consultant, Phillips Petroleum Company, Ohmic Heated Toroidal Experiment (OHTE)

Idaho National Laboratory

International Atomic Energy Agency (IAEA), Vienna – Physics Section Head (1995-2001)

- Coordinated research projects, technical meetings, technical documents

- Technology transfer to developing countries

- Nuclear fusion, instrumentation, utilization of research reactors and low-energy accelerators

IAEA consultant on nuclear safety

National Institute for Fusion Sciences, Toki, Japan

Tsinghua University, Beijing, China

Institute for Plasma Physics, Hefei, China

Southwest Institute of Physics, Chengdu, China

Arkansas Tech University

Institute for Plasma Research, Gandhinagar, India

Seoul National University, South Korea

Public Policy Committee, American Nuclear Society

Lectured in Iran, Italy, Ukraine, and National Nuclear Research University (Moscow)

Civilian Nuclear Trade Advisory Committee (CINTAC), US Department of Commerce

**Languages:** English, French, German, Russian, Chinese, Japanese

**Research interests:** molten salt reactors, nuclear fusion technology, low energy nuclear reactions

### **Selected Publications**

T. J. Dolan, review article, "Magnetic electrostatic plasma confinement," *Plasma Physics and Controlled Fusion* 36, 1539-1593 (1994)

T. J. Dolan, K. Yamazaki, and A. Sagara, "Helical fusion power plant economics studies", *Fusion Science and Technology* 47, 60-72 (2005)

T. J. Dolan, "Influence of scrap-off layer on plasma confinement", *Physics of Plasmas* 18, 032509 (2011)

T. J. Dolan, "Lithium deuteride / lithium tritide pellet injection", *Fusion Science and Technology* 61, 240- 247 (2012)

T. J. Dolan, "Nuclear Fusion", *Encyclopedia of Sustainability Science and Technology*, Springer Verlag 2013

T. J. Dolan, Editor, *Magnetic Fusion Technology*, (Springer Verlag, 2013)

T. J. Dolan, Editor, *Molten Salt Reactors and Thorium Energy* (Elsevier Press, 2017)



### 3 Interview on LENR Experience

Dr. Dolan was interviewed by telephone for the DLRDP on August 16, 2022<sup>4</sup>. The interview transcript is provided in Appendix B. Prior to the interview, a list of eight possible questions was provided to Dr. Dolan. He provided written responses, which are shown in Table 3-1.

Table 3-1

*Dr. Dolan's Responses to Proposed Interview Questions (Lightly Edited)*

**1. Where were you and what were you doing at the time of the March 23, 1989 LENR announcement?**

I was working at the Idaho National Engineering Laboratory. Coworker Paul Ritter told me about a seminar on cold fusion to be held at the University of Utah. We drove down the next day and attended the seminar. The seminar room was crowded with many excited people and photographers. Pons and Fleischmann gave a brief presentation which left many questions unanswered.

They only answered a few questions and then left. I imagine that they were under great stress from dozens of people trying to contact them for information.

**2. What was your initial response? Did you undertake any near-term actions?**

We told our colleagues at the Idaho National Lab about the new technology. Glen Longhurst, Paul Ritter, I, and several colleagues built an electrolysis experiment. Unfortunately, the laboratory management shut down our experiment. Politics interfered with science.

**3. When and how did you first become engaged with the LENR field?**

About March 23, 1989, as described above.

**4. Can we discuss your overall trajectory of involvement with LENR? Can we step through what you remember in sequential form?**

1989 Electrolysis experiment cancelled

1990s Read articles about Low Energy Nuclear Reactions

1995-2001 Served as IAEA Physics Section Head

2001 Invited professor X Z Li to lecture on LENR at the IAEA

2002 Participated in ICCF9 in Beijing. We recommended:

1. Cold fusion → condensed matter nuclear sciences (CMNS)
2. New technical society – International Society for CMNS
3. Journal -- International Journal of Condensed Matter Nuclear Sciences
4. Benchmark experiment
5. Joint review article to mainstream journal
6. Annual Preparata award
7. Higher standards for talks and posters
8. Study of potential applications and conceptual designs

<sup>4</sup> Grimshaw, T., 2022. Interview for the Dolan LENR Research Documentation Project. Memo to Tom Dolan, August 18.

2005 Participated in ICCF-12 Yokohama and wrote summary.

2005-2009 Helped Anthony Zuppero with molecular physics article. arXiv 0904.4522 2009. This led to a nuclear model with a similar potential profile.

2010 – 2022 Collaborated with Zuppero on Heavy Electron Catalysis of Nuclear Reactions. (Please see list of references)

Conferences: ICCF18 University of Missouri 2016

ICCF21 Colorado State University 2019

ICCF24 2019 Mountain View CA 2022

**5. What are your most recent activities and accomplishments (to the extent that you can disclose them)?**

Anthony Zuppero, Thomas J. Dolan, Electron Quasi-Particle Catalysis of Nuclear Reactions, J. Condensed Matter Nucl. Sci. 29 (2019) 376–391

Anthony C. Zuppero, Thomas J Dolan, Heavy Electron Catalysis of Nuclear Reactions, J. Condensed Matter Nucl. Sci. 31 (2019) 62-90.

Anthony Zuppero, Thomas J Dolan, Catalysis of Transmutations by Heavy Electron Quasiparticles in Crystallites, arXiv 2008.05603 (2020). ([arXiv:2008.05603](https://arxiv.org/abs/2008.05603))

**6. LENR is highly controversial. Do you believe it is a real phenomenon?**

Definitely. The transmutations are clear.

**7. What is needed to advance the field and solve the problems, particularly explanation and reproducibility?**

Financial support from government and industry.

More good publicity, such as that by Ruby Carat.

More public demonstrations like those of Brillouin Energy and LEC.

LENR courses at universities

Research leaders should avoid personal attacks on each other.

**8. Tell us a little about yourself. Where were you born and raised? What did you do before the LENR announcement?**

My father was a professor at the University of Illinois. I grew up in Champaign Illinois. After earning a bachelor’s degree in engineering mechanics there I served two years in the Navy on the USS Barry (DD-933). In the 1962 Cuban Missile Crisis our ship went alongside the Metallurg Anusov. A US officer spoke Russian and ordered them to uncover the missiles. I recognized that it is important to learn languages of your adversaries. I learned the Russian while I was in nuclear engineering graduate school at Illinois. Then in 1970-1971 I had a nine-month postdoc in the Soviet Union on an international exchange program between US universities and Soviet universities. I studied plasma stability at the Institute of Nuclear Physics in Novosibirsk. Then I became a nuclear engineering faculty member at the University Missouri Rolla for many years. I wrote the textbook “Fusion Research” in 1982.

I spent a year teaching in Taiwan 1976-1977 and learned some Chinese. In 1983-1984 I worked for Phillips Petroleum Company on fusion research. I joined the Idaho National Engineering Laboratory in 1989. From 1995-2001 I served as Physics Section Head of the International Atomic Energy Agency. Since 2007 I have been affiliated with the Nuclear Plasma and Radiological Engineering Department at the University of Illinois at Urbana-Champaign. I published the book “Magnetic Fusion Technology” in 2013 in the book “Molten Salt Reactors and Thorium Energy” in 2017.

## 4 LENR Publications

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A list of Dr. Dolan's LENR-related publications is provided in Table 4-1<sup>5</sup>. The first three papers were somewhat earlier, in 1990, 2002 and 2005. More recent papers with Anthony Zuppero in 2019 and 2020 are derived from Dr. Dolan's affiliation with Tionesta Applied Research Corporation. Another publication with Zuppero is currently in review.

*Table 4-1*

*Dr. Dolan's LENR Publications as Provided by Him and as Identified on LENR-CANR.org*

<u>First Author</u>	<u>Year</u>	<u>Description</u>
Longhurst, G. R.	1990	Longhurst, G.R., T.J. Dolan, and G.L. Henriksen, An investigation of energy balances in palladium cathode electrolysis experiments. <i>J. Fusion Energy</i> , 1990. 9: p. 337.
Dolan, T. J.	2002	Dolan, T.J. An outsider's view of cold fusion. in <i>The 9th International Conference on Cold Fusion, Condensed Matter Nuclear Science</i> . 2002. Tsinghua Univ., Beijing, China: Tsinghua Univ. Press.
Dolan, T. J.	2005	Dolan, T.J., Notes from the 12th International Conference on Condensed Matter Nuclear Sciences. 2005: Yokohama, Japan.
Dolan, T. J.	2019	Dolan, T.J. and A. Zuppero. Heavy Electron Catalysis of Nuclear Reactions. in 2019 LANR/CF Colloquium at MIT. 2019. Cambridge, MA.
Zuppero, A.	2019	Zuppero, A. and T.J. Dolan, Electron Quasi-particle Catalysis of Nuclear Reactions. <i>J. Condensed Matter Nucl. Sci.</i> , 2019. 29: p. 376-391.
Zuppero, A.	2020	Zuppero, A. and T.J. Dolan, Heavy Electron Catalysis of Nuclear Reactions. <i>J. Condensed Matter Nucl. Sci.</i> , 2020. 31: p. 62-90.
Zuppero, A.	In Review	Zuppero, A. and T.J. Dolan, Catalysis of Transmutations by Heavy Electron Quasiparticles in Crystallites. <i>Journal to Be Determined</i> .

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<sup>5</sup> Grimshaw, T., 2022. Combined Set of Dolan Publications. Memo to Tom Dolan, August 19.

## 5 Book Collection

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Dr. Dolan has collected nine LENR-related books<sup>6</sup>. They are listed in Table 5-1.

*Table 5-1. Items in Dr. Dolan's LENR Library*

XingZhong Li, Editor, *Condensed Matter Nuclear Science*, Proceedings of the 9<sup>th</sup> International Conference on Cold Fusion, Beijing, May 19-24, 2002.

Jean-Paul Biberian, Editor, *Cold Fusion*, Advances in Condensed Matter Nuclear Science, Elsevier 2020.

S. V. Adamenko et al., Editors, *Controlled Nucleosynthesis*, Springer 2007.

Edmund Storms, *The Science of Low Energy Nuclear Reaction*, World Scientific 2008.

Edmund Storms, *The Explanation of Low Energy Nuclear Reaction*, Infinite Energy Press 2014.

Akito Takahashi, Ken-Ichiro Ota, Yasuhiro Iwamura, Editors, *Condensed Matter Nuclear Science*, Proceedings of the 12<sup>th</sup> International Conference on Cold Fusion, Yokohama, Japan, November 27 – December 2, 2005, World Scientific 2006/

Eugene Mallove, *Fire from Ice*, Wiley 1991.

Jan Marwan and Steve Krivit, Editors, *Low-Energy Nuclear Reactions Sourcebook*, American Chemical Society 2008.

Randolph R. Davis, *Bridging the Gaps*, an Anthology on Nuclear Cold Fusion, Westbow Press 2021.

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<sup>6</sup> Grimshaw, T., 2022. Books in LENR Library. Memo to Tom Dolan, August 23.

## 6 *Electronic Files*

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Dr. Dolan has collected and organized LENR information in more than 5200 files<sup>7</sup>. Many of the files are organized in folders named for the person they are derived from or related to. Figure 6-1 shows the folders and files without the folders being expanded. They are shown with folders expanded in Appendix C (Volume 2 of this report), which comprises over 140 pages. The file collection may therefore be considered a primary component of Dr. Dolan's LENR library.

*Figure 6-1.*

*Screenshots of Dr. Dolan's Collection of LENR-Related Files*

*(Following Seven Pages)*

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<sup>7</sup> Grimshaw, T, 2022. Dolan's LENR-Related Electronic Files. Memo to Tom Dolan, September 1.

- Favorites**
- Google Drive
  - Dropbox
  - Applications
  - Recents
  - iCloud Drive
  - Downloads
  - Desktop
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  - Creative Cloud Files
  - Documents
- Locations**
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  - RECOVERY
- iCloud**
- Shared
- Tags**

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Abstract for ICCF-21.pdf	Feb 7, 2018 at 8:50 AM	563 KB	PDF Document
acsami.2c04736 THz.pdf	Aug 5, 2022 at 9:38 PM	2.5 MB	PDF Document
am2c04736_si_001 THz.pdf	Aug 5, 2022 at 9:34 PM	874 KB	PDF Document
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Biberian-1998_JPexcessheatc(2).pdf	Sep 15, 2014 at 1:46 PM	1.7 MB	PDF Document
BiberianJPjcondensedze.pdf	May 8, 2020 at 10:36 PM	1.6 MB	PDF Document
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Bozza2.pdf	Feb 4, 2022 at 3:40 PM	928 KB	PDF Document
Brillouin-Press-Release-Second-Commercial-License-7-2-18-Final.pdf	Nov 25, 2019 at 8:15 PM	70 KB	PDF Document
Carpinteripiezonucle.pdf	Aug 19, 2020 at 9:12 PM	941 KB	PDF Document
cavitation.docx	Mar 26, 2019 at 3:42 PM	17 KB	Microso...(docx)
> Celani	Aug 21, 2022 at 6:17 PM	--	Folder
Celani-2008 electromigration D2 large effects Fdeuteronel.pdf	Feb 11, 2013 at 5:38 PM	896 KB	PDF Document
CES_LEN.R.pdf	Mar 26, 2019 at 3:40 PM	736 KB	PDF Document
CFRLNs111.docx	Dec 18, 2020 at 4:28 PM	34 KB	Microso...(docx)
CFRLNs113.pdf	Jun 21, 2021 at 7:57 AM	427 KB	PDF Document
ChechinVAcriticalre.pdf	Nov 12, 2015 at 5:59 AM	653 KB	PDF Document
cheminuclear fusion.pdf	Feb 10, 2015 at 9:26 AM	1.9 MB	PDF Document
> CHS 2017	Aug 21, 2022 at 6:17 PM	--	Folder
> Chubb	Aug 21, 2022 at 6:17 PM	--	Folder
Cirillo KEM.495.104.pdf	Dec 2, 2011 at 4:04 PM	347 KB	PDF Document
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  - Creative Cloud Files
  - Documents
- Locations**
- Macintosh HD
  - RECOVERY
- iCloud**
- Shared
- Tags**

Name	Date Modified	Size	Kind
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ClarkeInterviewTranscript(1).pdf	Mar 12, 2014 at 9:45 PM	25 KB	PDF Document
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Dolan LENR 2011 April 5.ppt	Apr 5, 2011 at 3:15 PM	46.7 MB	PowerP...n (.ppt)
dolan_lenr__2007_sep_11.pdf	Dec 8, 2019 at 7:32 PM	5.3 MB	PDF Document
dolan_tj - Yahoo Mail.htm	Feb 28, 2015 at 10:36 AM	270 KB	HTML text
DolanMITSummary.pdf	May 6, 2014 at 1:57 AM	134 KB	PDF Document
DTP 13 Primer on Detection.pdf	Mar 24, 2022 at 8:13 AM	1.9 MB	PDF Document
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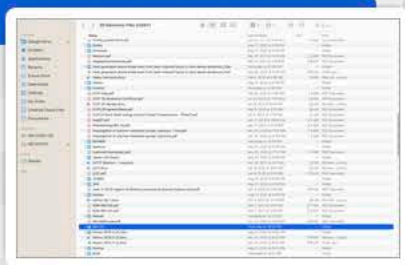
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- Google Drive
  - Dropbox
  - Applications
  - Recents
  - iCloud Drive
  - Downloads
  - Desktop
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  - Creative Cloud Files
  - Documents
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- Macintosh HD
  - RECOVERY
- iCloud**
- Shared
- Tags**

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ICCF-20 Sendai.docx	Jan 9, 2017 at 9:44 AM	30 KB	Microso...(docx)
ICCF22ProgramVsep4.pdf	Sep 8, 2019 at 9:20 AM	95 KB	PDF Document
ICCF24 Solid-State Energy Summit Poster Presentations - Sheet1.pdf	Jul 2, 2022 at 11:19 AM	41 KB	PDF Document
img001.pdf	Jan 11, 2016 at 10:00 AM	4.1 MB	PDF Document
InfiniteEnergy160 (1).pdf	Apr 11, 2022 at 9:10 PM	4.4 MB	PDF Document
Investigation of electron mediated nuclear reactions - final.pdf	Nov 29, 2018 at 7:09 AM	1.4 MB	PDF Document
Investigation of electron mediated nuclear reactions.pdf	Jun 29, 2018 at 12:54 AM	1.1 MB	PDF Document
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lwamuraYlowenergyn.pdf	Nov 25, 2019 at 11:17 PM	1.1 MB	PDF Document
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jcf21.docx	Jun 6, 2020 at 9:52 AM	22 KB	Microso...(docx)
jcf21.pdf	Jun 6, 2020 at 9:52 AM	170 KB	PDF Document
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- 📁 RECOVERY

iCloud

- 📁 Shared

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## ***7 Summary and Future Opportunities***

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Dr. Dolan's interest in the LENR field extends back to his attendance at the Fleischmann and Pons press conference in 1989. After a LENR experiment at his home organization, INEL, was shut down just a few months after the press conference, Dr. Dolan continued his interest in the field by studying papers and attending ICCF conferences. In recent years he has become more deeply involved through his affiliation with Dr. Zupporo and Paul Crone at Tionesta Applied Research Corporation.

A primary opportunity for future work on the DLRDP is to more closely examine his work with Dr. Zuppero in the LENR field, in particular their hypothesis on how the phenomenon occurs.

## 8 Project Methods

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The methods used in the Dolan LENR Research Documentation Project are based on general LRDI procedures<sup>8</sup> that are modified to meet the specific requirements of individual projects. The DLCDP is being performed according to accepted project management practices<sup>9</sup>. The overall LRDI procedure is set forth in an Infinite Energy article<sup>10</sup>.

An initial interview was conducted with Dr. Dolan by phone in August 2022. Memos were then prepared (Table 8-1) to document the interview as well as his LENR papers, library holdings, and electronic files. These memos have served as the basis for preparation of this DLRDP report.

*Table 8-1.*

*Memos Prepared for the Dolan LENR Contributions Documentation Project*

<u>Date (2022)</u>	<u>Subject</u>
August 16	Resumes for the Dolan LENR Research Documentation Project
August 18	Interview for the DLRDP
August 19	Combined Set of Dolan Publications
August 23	Books in LENR Library
September 1	Dolan's LENR-Related Electronic Files

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8 Grimshaw, T.W., 2019. Collection, Organization, and Documentation of LENR Research Results: Guideline. January.

9 Project Management Institute, 2017. A Guide to the Project Management Body of Knowledge (PMBOK® Guide) — Seventh Edition and the Standard for Project Management (ENGLISH). Project Management Institute. Newtown Square, PA.

10 Grimshaw, T., 2020. Documenting Cold Fusion Research: Preserving a Vital Asset for Humankind. Infinite Energy, Issue 150, March/April 2020, p. 9-13.

## Appendix A. Long-Form Resume

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### Resume

### Thomas James Dolan

#### **Nuclear Technology, Applications and Education**

Department of Nuclear, Plasma and Radiological Engineering  
University of Illinois at Urbana-Champaign  
Home: 1061 210<sup>th</sup> St., Ionia, IA 50645  
Cell phone: 1-217-369-0489  
[dolantj@illinois.edu](mailto:dolantj@illinois.edu)

#### **Education**

BS Engineering Mechanics, University of Illinois	1961
US Navy	1961-1963
Atomic, Biological, and Chemical Warfare Defense	
Damage Control and Fire Fighting	
PhD Nuclear Engineering, University of Illinois	1970
Management training, IAEA	1995-2001
Executive Leadership	
Interviewing Skills	
Conference Presentation Skills	
Negotiating Skills	

#### **Work Experience**

Adjunct Professor, Department of Nuclear, Plasma and Radiological Engineering,  
University of Illinois, 2007 – present, except as noted below.  
Guest Professor, Seoul National University, June-August 2018  
Guest Professor, National Nuclear Research University, Moscow June 2014  
Guest Professor, Seoul National University, September-December 2011  
Visiting Professor, Chinese Academy of Sciences, Institute for Plasma Physics, Hefei,  
May-July 2011  
Guest Professor, Institute for Plasma Research, Gandhinagar, India, fall 2010  
Professor, Mechanical Engineering Department, Arkansas Tech University, 2009-2010  
Guest Professor, Southwestern Institute of Physics, Chengdu, China, Summer 2009.  
Guest Professor, Academic Sinica Institute of Plasma Physics, Hefei, China, July –  
October 2008  
Guest Professor, SUNIST Laboratory, Engineering Physics Department, Tsinghua  
University, Beijing, China, March – May 2006.  
Guest Professor, National Institute for Fusion Sciences (NIFS), Toki, Japan, October  
2003 – April 2004

Fusion power plant economics studies  
Lectures on nuclear topics  
Consultant, Nuclear Safety and Training, International Atomic Energy Agency, 2003-2011.  
Security of radioactive sources.  
Radiation safety in developing countries  
Nuclear infrastructure development in countries embarking on nuclear power  
Consulting Scientist, Idaho National Laboratory (INEEL), 2001-2006  
Generation-4 fission reactors (cross-cut fuel cycle study; Pu recycle in LWR)  
Modular Pebble Bed Reactor fission product chemistry and transport  
LWR fuel design  
Safeguards  
Radioactive waste shipment accounting  
University grant program peer review organization  
Physics Section Head, International Atomic Energy Agency (IAEA), 1995-2001  
Administration, international research coordination, technical meetings, and public information in areas of  
Nuclear fusion research  
Utilization of research reactors and low-energy accelerators  
Nuclear instrumentation (such as neutronic methods for explosives identification)  
Principal Scientist, Idaho National Engineering Laboratory (INEL), 1992-1995  
Tokamak, stellarator, and inertial confinement fusion reactor design studies  
Tritium safety studies  
Space nuclear power  
Organization of peer review processes for DOE university grant programs  
Nuclear Engineering Education Research Grant Program  
University Research Instrumentation Grant Program  
Principal Scientist, Center for Nuclear Engineering and Technology (INEL), 1989-92  
HYLIFE-II inertial confinement fusion reactor safety study  
Arms control policy studies  
Reaction rate parameters, interaction of water molecules with plasma  
Organization of peer review process for DOE university grant programs  
Scientific Specialist, Physics and Mathematics Group, INEL, 1988-1989  
Neutronics analysis of lithium target irradiation for the New Production Reactor  
Physics analysis of accelerator-produced neutrons for cancer therapy  
Research reactor utilization study  
Faculty, Nuclear Engineering Department, University of Missouri-Rolla 1971-1989  
Taught about 20 different nuclear engineering courses  
Developed new courses in fusion research, plasma physics, plasma laboratory  
NSF Undergraduate Research Participation Grant  
Department Chair 1985-1987  
Principal Project Physicist, Phillips Petroleum Company, 1987-1988, at INEL  
Nuclear Materials Generator Project (reversed field pinch neutron source)  
Computed pulse length, impurity accumulation, and tritium yield



Developed Experimental Program Plan and estimated costs  
Physicist, Phillips Petroleum Company, 1984-1985 (sabbatical leave)  
Ohmically Heated Toroidal Experiment  
X-ray tomography and neutron spectroscopy  
Summer research faculty, Oak Ridge National Laboratory, 1979  
Physics theory of gas emission from plasma chamber walls  
Visiting Professor, National Tsing Hua University, Taiwan 1977-78 (sabbatical leave)  
Summer faculty, Lawrence Livermore National Laboratory, 1976 & 1977  
Fusion reactor design studies  
Summer faculty, INRS-Energie, Universite du Quebec, 1972 & 1973  
Electrostatically plugged cusp experiment  
International Research & Exchanges Board (IREX) postdoctoral program, USSR, 1970-1971, sponsored by the U.S. Department of State and the Ford Foundation  
Moscow State University (1 month)  
Novosibirsk State University & Novosibirsk Institute of Nuclear Physics (9 months)  
Plasma theory and computer simulation of plasmas  
US Naval Reserve Unit, 1967-1968 Classified projects  
Summer research, Los Alamos National Laboratory, 1967  
Plasma diagnostics, Columba Project, Ruby laser Mach-Zehnder interferometer  
Summer research, Lawrence Livermore National Laboratory, 1966  
Mechanical engineering on Astron Project, Radiation shielding, x-ray diagnostic  
Research Assistant and Fellow, University of Illinois, 1964-1970  
Beta energy spectrum from U-235 fission  
Spectroscopy of theta pinch plasmas  
Electrostatic-inertial plasma confinement  
Laser heterodyne measurements of plasma refractivity  
Active Duty, United States Navy, 1961-1963  
Assistant Engineering Officer, USS BARRY (DD-933)  
Steam power plant engineering  
Cuban Missile Blockade

### **Administrative Experience**

Head, Physics Section, International Atomic Energy Agency, 1995-2001.  
(10 people; budget 3 M\$ plus technical oversight of 5 M\$ technical cooperation funds).  
Prepared program plans and budgets  
Guided implementation of tasks  
Prepared job descriptions  
Evaluated staff performance  
Recommended hirings and promotions  
Reported on section activities  
Organized technical meetings and coordinated research project  
Allocated travel support grants  
Interfaced with Missions of Member States, other organizations (IFRC, ITER, IEA), other IAEA divisions, and the public.

Technical Advisor to US Department of Energy university grant programs, 1990-1994.

Organized peer review process and progress review meetings for the  
Nuclear Engineering Education Research Grant Program

(~130 applications/year, 4 M\$/year)

Organized peer review process for the  
University Research Instrumentation Grant Program

(~170 applications/year, 5 M\$/year).

Chair, Nuclear Engineering Department, University of Missouri-Rolla, 1985-1987. (Left to work for Phillips Petroleum Company.)

Supervised faculty activities

Improved the curriculum

Managed the department budget

Mediated controversies

Interfaced with students, parents, employers, and the university administration.

M Division Officer on a destroyer, US Navy, 1961-1963

In charge of 90 men, including performance, training, discipline, and records.

Officer of the Deck

Defense Counsel on Courts Martial.

### **Teaching Accomplishments**

I have taught approximately 19 courses at the University of Missouri and elsewhere, including:

Introduction to nuclear engineering, modern physics, reactor physics, thermal hydraulics, numerical methods, nuclear energy conversion, power plant design, nuclear instrumentation, plasma physics theory, plasma physics laboratory, numerical simulation of plasmas, fusion research principles, fusion experiments, fusion technology, nuclear reactor laboratory (2 courses), nuclear materials, advanced nuclear reactors, radiation shielding.

I developed new courses on fusion research principles, experiments, and technology, and plasma physics laboratory, and wrote the textbook *Fusion Research* (Pergamon Press, 1982) The plasma Laboratory topics were gas discharge and breakdown, magnet coil operation, Langmuir probe, capacitor bank operation and safety, theta pinch operation, magnetic probes, spectral line measurements, and microwave interferometer.

I taught two Research Reactor Laboratory courses, which covered the following experiments:

fuel loading, approach to critical, control rod calibration, void coefficient, poison worth, excess reactivity, temperature coefficient, power calibration, neutron activation analysis, gamma spectrometry, thermal neutron time-of-flight spectrometry, neutron diffraction, neutron flux mapping, neutron energy spectrum by foil activation, subcritical assembly, radiation monitoring, liquid scintillation counter, fission fragment beta decay spectrum.

In my teaching I tried a variety of techniques, such as

- Lists of review questions to help students check their knowledge.
- A class with a brief review quiz at the beginning of each session
- Tests with imaginative scenarios, such as hypothetical nuclear industry events.

- A laboratory course where students went at their own pace, doing one module at a time, then proceeding to the next module when they had mastered it. (The grade was based on the number of modules completed.)

### **Research Accomplishments**

Magnetic Electrostatic Plasma Confinement, University of Missouri-Rolla

Developed theory of plasma potential and confinement time

Did reactor design study and cost estimate

Designed and built magnetic cusp experiment

Missouri Magnetic Mirror Experiment, University of Missouri-Columbia

Built experiment; developed x-ray tomography system for plasma diagnostics

Ohmic Heated Toroidal Experiment, Phillips Petroleum Company

Soft x-ray tomography system

High Power Density Nuclear Materials Generator Project

Reversed field pinch neutron source for tritium production, Phillips Petroleum

Computed plasma pulse length, impurity accumulation, and tritium yield

Experimental Program Plan, cost estimate, and System Technical Description

Analyzed safety and environmental aspects of fusion reactor designs

Plasma diagnostics experience:

Doppler and Stark broadening

ruby laser Mach-Zehnder interferometer

He-Ne laser heterodyne interferometer

microwave interferometer

Langmuir probes

magnetic probes and flux loops

soft x-ray tomography

neutron time-of-flight spectrometry.

Influence of scrape off layer on plasma confinement (2011)

Injection of LiD/LiT pellets (2012)

Theory of heavy electron catalysis of nuclear transmutations (ongoing)

### **International Experience**

*Russia & Ukraine:* Lived in USSR 10 months 1970-1971. Several visits to Russia and Ukraine 1994-2000 and 2014 for fusion research and criticality safety (Moscow, St. Petersburg, Obninsk, Arzamas-16, Novosibirsk, Kharkov, Kiev, Alushta). Can speak Russian.

*Europe:* Worked at the International Atomic Energy Agency, Vienna, Austria, 7 years. Can speak French and German.

*China:* Lived in Taiwan one year 1977-1978. Visited China in 1998, 2002, 2006, 2018 for technical meetings. Taught at Tsinghua University, Beijing; in Hefei; and in Chengdu. Can speak fundamental Chinese.

*Japan:* Visited Japan in 1995-2004 for technical meetings on fusion research and research reactor utilization (Naka, Tokai-Mura, Oh-Arai, Tokyo, Yokohama, Nagoya, Toki,

Osaka, Kyoto), including 7 months research at the National Institute for Fusion Sciences in 2003-2004. Can speak fundamental Japanese.

*India:* Taught fusion technology at the Institute for Plasma Research, Gandhinagar, India, 2010.

*South Korea:* Taught Magnetic Fusion Technology at Seoul National University, 2011, 2018.

Organized coordinated research project involving 11 countries on "Comparison of Compact Toroid Configurations" (nuclear fusion research).

Organized technical meetings in Brazil, Canada, China, Croatia, France, Germany, India, Italy, Japan, Korea, Portugal, and Russia.

Presented invited lectures in China, Iran, Italy, Japan, and Ukraine.

Led IAEA fact-finding mission to Egypt to study problems of their new research reactor.

### **Other Experience**

DOE Q Clearance (inactive) and DOD Top Secret Clearance (inactive)

Registered Professional Engineer

Accreditation Board for Engineering and Technology (ABET)

Observer, Massachusetts Institute of Technology, 1992

Evaluator, University of Massachusetts Lowell, 1994

Consultant

Tionesta Applied Research Corporation 2013-present

Khosla Ventures 2016-present

ExxonMobil Engineering Research 2015-2017

Phillips Petroleum Company 1981-1988

Applied Fusion Research Corporation 1984-1985

International Atomic Energy Agency 2002-2011

NeoKismet Corporation 2005-2006

Civil Nuclear Trade Advisory Committee (CINTAC), US Department of Commerce 2014-2018

### **Professional Affiliations and Activities**

American Physical Society (APS)

American Society for Engineering Education (ASEE)

American Nuclear Society (ANS)

Faculty Advisor, ANS student chapter, University of Missouri-Rolla, various years

Faculty Advisor, Alpha Nu Sigma honorary society, University of Missouri-Rolla, various years

Idaho Section, American Nuclear Society

Environment Committee Chair

Secretary

Newsletter Editor

Board Member

Vice Chair/Chair Elect (before departure to the IAEA)

Professional Engineering Examination Committee

Public Policy Committee 2013-2016  
Technical Program Co-Chair, ANS Topical Meeting on Nuclear Technologies for Space Exploration 1992, Jackson Hole, WY, August 16-19, 1992  
Assistant Technical Program Chair, Americas Nuclear Energy Symposium, October 16-18, 2002, Coral Gables, Florida.

### **Honors and Awards**

University of Illinois  
Bronze Tablet (top 3% of graduating class)  
Tau Beta Pi (Engineering Honorary Society) Student Chapter President  
Naval Reserve Officers Training Corps (NROTC) Navigation Cup  
NROTC Tribune Medal and sword (top midshipman in graduating class)  
NASA Traineeship  
AEC Fellowship  
NSF Fellowship  
American Nuclear Society Student Conference, Best Paper Award.  
University of Missouri-Rolla – 5 Outstanding Teacher Awards  
International Atomic Energy Agency, Vienna (shared 2005 Nobel Peace Prize)

### **Publications**

#### Books

T.J. Dolan, *Fusion Research*, Pergamon Press, 1982  
Thomas J. Dolan, Editor, *Magnetic Fusion Technology* (Springer Verlag, London, 2013)  
Thomas J. Dolan, Editor, *Molten Salt Reactors and Thorium Energy* (Elsevier, London, 2017)

#### Chapter in book:

T. J. Dolan, "Nuclear Fusion", *Encyclopedia of Sustainability Science and Technology*, Springer Verlag 2012.

#### Fusion Research in General

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- D. Bora and T. J. Dolan, Editors, "Steady state operation of tokamaks," *IAEA-TECDOC-1160* (2000).
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- T. J. Dolan and U. Schneider, "IAEA nuclear fusion research and development activities," *Proceedings of the 4<sup>th</sup> Symposium on Current Trends in International Fusion Research*, March 2001, Washington, DC, to be published by NRC Research Press, Ottawa, Canada, 2003.
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- T. J. Dolan, D. F. Duchs, R. Kirkpatrick, D. Kraft, E. Lindman, C. Orth, R. F. Post, J. R. Roth, M. J. Sadowski, G. Van Oost, "Summary of the 4<sup>th</sup> Symposium on Current Trends in International Fusion Research," *Fusion Science and Technology* 43, 138-142, (2003).
- Plasma Physics & Engineering
- T.J. Dolan, "Kinetic instability of a bounded electron beam in a plasma", *Geomagnetizm i Aeronomiya* 12, 18 (1972) [in Russian].
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 G. R. Longhurst and T. J. Dolan, "HYLIFE-II tritium management system," EG&G Idaho Report EGG-FSP-9971 (1993).  
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T.J. Dolan, D.M. Woodall, J.Negus-de Wys, E.H. Ottewitte, J.S. Herring, and D. Buden, "Scientific and terrestrial benefits of the space exploration initiative," *Proceedings of the 8th Symposium on Space Nuclear Power Systems*, Albuquerque, NM, January 6-10, 1991, CONF-910116 (American Institute of Physics, New York, 1991) p. 234-239.

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## **Appendix B. Transcript of Dr. Dolan's LENR Interview**

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Tom Dolan: Hello.

Tom Grimshaw: Good morning again. Hold on. Okay, we are being recorded at this time.

Tom Dolan: Good, good.

Tom Grimshaw: Can you hear me all right?

Tom Dolan: Sure.

Tom Grimshaw: Oh, yeah. Okay. Good. They changed this app a little bit, so I had to figure out how to respond to those changes. So I'll begin with an introductory spiel and then we'll go into the interview.

Tom Dolan: Okay.

Tom Grimshaw: So to start with, my name is Tom Grimshaw. It is August 16th, 2022, and I'm on the phone with Tom Dolan. And the purpose of our call is it's an interview with Tom Dolan about his adventures in the field of cold fusion, also called low energy nuclear reactions, which was announced on March 23rd, 1989 by Martin Fleischmann and Stanley Pons. And, Tom, why don't we just begin with, where were you and what were you doing at the time of that announcement in 1989?

Tom Dolan: I was working on nuclear fusion research at the Idaho National Engineering Laboratory and a friend of mine, Paul Ritter, told me there was going to be a seminar at the University of Utah on the newest topic called cold fusion. We drove down there the next day and attended that first seminar of Fleischmann and Pons. It was quite crowded; all the seats were filled and people were standing up in the back and press—

Tom Grimshaw: So this was the original press conference where the announcement was made?

Tom Dolan: Yes, sir. That's right.

Tom Grimshaw: Interesting. I had no idea that you were there in person.

Tom Dolan: They spoke briefly and told basically what they'd done and the results. And it looked like it was a nuclear reaction. And they didn't allow many questions, then they left. And we were frustrated because we had a lot of questions we wanted answered, but we went back to the Idaho lab then and told our colleagues about it.

Tom Grimshaw: Okay. There was a tour for the press of their laboratory and showing the experiment. Were you able to participate in that tour?

Tom Dolan: No, we were not invited to a tour.

Tom Grimshaw: Okay. Okay. Good. Well, so what happened then? Did you get involved in anything in particular in response to that announcement, or?

Tom Dolan: Well, we, I and some others, started an electrolysis experiment to try to duplicate the results of Pons and Fleischmann. We had about a quarter inch palladium rod in water and started kind of, but after a few months the management shut it down. They were worried about political embarrassment.

Tom Grimshaw: Right. Yes. So who besides yourself was in on that early experiment at INEL?

Tom Dolan: Glen Longhurst, Paul Ritter. There were a couple others. I don't remember exactly who it was.

Tom Grimshaw: Okay. And what were the results of the experiment? Did you see anything similar to what was being reported by Fleischmann and Pons?

Tom Dolan: No, we didn't have any results. The word was that you had to incubate it for a long time before you started seeing energy gain.

Tom Grimshaw: Okay. The work being shut down at the national laboratory I suspect, or I suppose, was in response to the DOE mandate after the final report from the Energy Research Advisory Board recommended no specific research for this field. And it was not long after that report, which came out in, I think, November, December of 1989, the DOE put the word out, saying no more cold fusion research at the national laboratories.

Tom Dolan: I think it was shut down before that.

Tom Grimshaw: Oh, okay. So you—

Tom Dolan: I think it was in July.

Tom Grimshaw: July? Okay.

Tom Dolan: Or June.

Tom Grimshaw: Okay. So it was local laboratory management that made the decision. They weren't just responding to the DOE mandate.

Tom Dolan: That's right, as far as I know.

Tom Grimshaw: Okay. Interesting. All right. So that came to an end. You went back to your normal job and normal duties and research. What was the next time that you got involved with this field, with cold fusion?

Tom Dolan: We had not stopped doing our regular job. We kept doing our regular job, just did this with a little bit of spare time.

Tom Grimshaw: Okay. So that project came to an end, but I think you kept your interest in the field—

Tom Dolan: That's right.

Tom Grimshaw: ...because I think you attended the International Conferences on Cold Fusion. Or how else were you involved after that?

Tom Dolan: So I kept on occasionally reading articles about it and proposed to give a seminar at the Idaho laboratory later, but the management said, "Don't give a seminar on this topic." That was years later.

Tom Grimshaw: Okay.

Tom Dolan: Politics interferes with science.

Tom Grimshaw: Yep, that's for sure. Especially in this field. So let's see, you proposed to give a seminar and then what was the first International Conference on Cold Fusion that you attended?

Tom Dolan: It was 2002.

Tom Grimshaw: Okay. Okay. So quite a bit later then.

Tom Dolan: I was at the Idaho lab from 1989 until 1995. Then I went to the IAEA for six years, physics section, then I came back to the Idaho lab.

Tom Grimshaw: Okay. Okay.

Tom Dolan: So I was at that and I had invited Professor Xing-Zhong Li to lecture on low energy nuclear reactions with the IAEA; and then he invited me to ICCF-9 in Beijing in 2002.

Tom Grimshaw: Okay, good. At that time you were not giving presentations, you were attending just to stay current in the field.

Tom Dolan: That's right. But I was on the committee that discussed where the field should go.

Tom Grimshaw: I'm sorry. Say that again about the committee.

Tom Dolan: It discussed where the cold fusion research should go. What we should do.

Tom Grimshaw: Okay, okay.

Tom Dolan: We made eight recommendations for improving research field.

Tom Grimshaw: Ah, okay. Yeah, and I think I remember seeing in the literature a document that you had prepared in that regard.

Tom Dolan: Yes.

Tom Grimshaw: Okay. I don't remember the exact citation of that paper, but I do remember seeing it. Okay, so that was in 2002. Did you continue to go to those conferences after that?

Tom Dolan: The next conference I attend was ICCF-12 in Yokohama in 2005. I wrote a summary of that.

Tom Grimshaw: Okay. I'm concerned that we have some interference on the line. If it doesn't go away, I'll have to call you back again.

Tom Dolan: Okay.

Tom Grimshaw: Okay. So Yokohama in 2005, and anything in particular that you did or experienced there?

Tom Dolan: I wrote a summary of that meeting.

Tom Grimshaw: Okay.

Tom Dolan: I don't remember if we published anywhere or not.

Tom Grimshaw: Yeah, I think I remember seeing that as well. I may have been able to get my hands on that. Okay, good. Well, take it from there. What was your trajectory from that point forward? You continued to go to the conferences and anything else you might have done after Yokohama.

Tom Dolan: Well, in 2005 to about 2009, I helped Anthony Zuppero with an article on molecular physics. We did studies of how [inaudible 00:10:38] electrons may be emitted from molecular interactions and converted to electricity. And the molecular phase diagram of the potential versus separation distance of that chemical reaction had a similar phase diagram for nuclear reactions. So Anthony's hypothesis was that heavy electrons can catalyze low energy nuclear reactions. So we worked on that starting about 2010, which went on to the present.

Tom Grimshaw: Okay. And the individual you're referring to is Anthony Zuppero.

Tom Dolan: Zuppero. Z-U-P-P-E-R-O.

Tom Grimshaw: Okay, good. And so how long did that work go on? Is it still underway? Or when did it—

Tom Dolan: It's still underway.

Tom Grimshaw: Still underway?

Tom Dolan: We gave a talk on that in the California meeting last month.

Tom Grimshaw: Okay. And that work is still going on now?

Tom Dolan: Yes.

Tom Grimshaw: Remind me, I don't think it's a secret, what the name of your organization is. If you can tell it, what is the name of the organization that you guys set up?

Tom Dolan: My personal affiliation is University of Illinois in Urbana-Champaign. But Anthony has a company called Tionesta Applied Research Corporation. That's spelled T-I-O-N-E-S-T-A.

Tom Grimshaw: Okay, good. Now let me just affirm, so the research that you guys are doing now and that you're pursuing is confidential. Is that correct?

Tom Dolan: No.

Tom Grimshaw: Oh, okay.

Tom Dolan: We have a couple publications on it in The Journal of Condensed Matter Nuclear Sciences.

Tom Grimshaw: Okay. So tell me about your respective roles, what is your role in that initiative versus Anthony?

Tom Dolan: Well, I'm helping him develop the theory and write publications.

Tom Grimshaw: Okay. And—

Tom Dolan: He's the genius. I'm the helper.

Tom Grimshaw: Say that again, please.

Tom Dolan: Anthony is the genius and I am the helper.

Tom Grimshaw: Okay. I did have the opportunity to meet Anthony, or Tony, at ICCF-24 just a few weeks ago. He's quite a dynamic individual.

Tom Dolan: Yes.

Tom Grimshaw: And there's a third individual, Paul Crone, that's—

Tom Dolan: Well, he's—

Tom Grimshaw: Go ahead.

Tom Dolan: There's a few others in that organization. There's Paul Crone who's the CEO.

Tom Grimshaw: Okay.

Tom Dolan: That's C-R-O-N-E.

Tom Grimshaw: Right. And so is there a name for this separate organization with the three of you?

Tom Dolan: We're just a corporation, Tionesta Applied Research Corporation.

Tom Grimshaw: Oh, I see. Okay. I got it. I didn't fully comprehend what you said earlier. So it's Tionesta and he's the CEO and you guys are the research arm, I guess. You're the ones that are pursuing the phenomenon with the theory that you've developed.

Tom Dolan: That's right.

Tom Grimshaw: Okay.

Tom Dolan: There are some investors in the corporation, Paul Sturrock and Bill Saas and then Bill Jansen.

Tom Grimshaw: Okay, good. Good. Are there any words that you can say regarding the status of achieving LENR, with this approach?

Tom Dolan: Well, there's an experiment that we're proposing to do and trying to find an organization to do the experiment.

Tom Grimshaw: Okay. And have you done experiments in the past, I presume?

Tom Dolan: I have not, no. The corporation has done a couple small experiments, but they don't really have good funding for it yet.

Tom Grimshaw: Oh, okay. I see. One of the things that Tony handed out, or gave me, when we were there was this folded piece of paper with panels on it explaining in a fairly elementary way what the idea is.

Tom Dolan: Right.

Tom Grimshaw: And I did see the two JCMNS articles. And so those are the primary place to go to get a little bit more in depth understanding.

Tom Dolan: Yes.

Tom Grimshaw: Okay, good.

Tom Dolan: And we have an abstract that's pursuant to the ICCF-24.

Tom Grimshaw: Oh, okay. Good. Was there a presentation also?

Tom Dolan: There was an oral presentation. Anthony gave a talk.

Tom Grimshaw: Okay. Well, those presentations were—

Tom Dolan: [inaudible 00:17:06]

Tom Grimshaw: Oh, I'm sorry. I was going to say those presentations are recorded and should be available pretty soon on their website.

Tom Dolan: Good.

Tom Grimshaw: So that means it'll be available. That's good.

Tom Dolan: And the abstract's going to be on there too.

Tom Grimshaw: Yep. So we'll get the abstract as a part of this project that we're working on. Is there anything else about Tionesta and the three of you to mention at this time?

Tom Dolan: There's another scientist participating. That's Dennis Pease. P-E-A-S-E.

Tom Grimshaw: Oh, okay. I know Dennis quite well. I did a project—

Tom Dolan: He—

Tom Grimshaw: Go ahead.

Tom Dolan: And he used to go... In the early 1970s, Dennis was in a class that I taught on plasma physics at the University of Missouri Rolla.

Tom Grimshaw: Oh, is that? That is interesting. Okay.

Tom Dolan: We knew each other for a long time.

Tom Grimshaw: Yeah. Okay. Very interesting. Yeah, he's a very interesting fellow. I did a project with him on the initiative there at the University of Missouri. Don't know why it won't come to me right now with Paul—

Tom Dolan: It was Kimmel probably.

Tom Grimshaw: Say again.

Tom Dolan: Sidney Kimmel Institute of Nuclear Research.

Tom Grimshaw: Yeah. It's Skinner. S-K-I-N-R. Right. Thank you.

Tom Dolan: Yes.

Tom Grimshaw: Yeah. So is it okay to tell me what is Dennis' role in Tionesta?

Tom Dolan: Yes, he participates in the discussions and helps with ideas.

Tom Grimshaw: Oh, okay. Very good.

Tom Dolan: His role is similar to mine. Consulting scientist.

Tom Grimshaw: Ah, okay. Very interesting.

Tom Dolan: There's no... The title, that's just generic. [inaudible 00:19:23]

Tom Grimshaw: Yeah, yeah. He's got some really interesting ideas, so I'm very interested to hear that he's a contributor to your efforts there. That's great.

Tom Dolan: He is.

Tom Grimshaw: Is there anything else about that endeavor?

Tom Dolan: Well, I can't tell you the details of what is the experiment we're proposing or where we're looking for money.

Tom Grimshaw: Yeah, okay. That's understandable. Well, let's reel back for a moment and talk about any other activities that you've had or involvement that you've had in the cold fusion field, going back to that Yokohama ICCF or has it just been the Tionesta efforts?

Tom Dolan: Just the Tionesta group.

Tom Grimshaw: Okay. Okay. Good. All right. Anything else? I'm sorry.



Tom Dolan: I attended ICCF-21 at Colorado State University in 2019 and ICCF-24 last month in Mountain View.

Tom Grimshaw: Okay. And what about the ICCFs in-between 9 and 21? Did you go to any of those?

Tom Dolan: I missed those.

Tom Grimshaw: Okay. Okay. Well, I know that you also attended the Mitchell Swartz CF LANR symposium. I know I saw you at the one in 2019 in March.

Tom Dolan: Yes.

Tom Grimshaw: Have you been to others of those?

Tom Dolan: I went to two of them. I don't remember exactly which years.

Tom Grimshaw: Yeah. I think they may be the same two that I went to. The earlier one was in, I think, 2014.

Tom Dolan: The later one had Carl Page.

Tom Grimshaw: Right. Yeah, we had a very nice dinner. I remember that. Yep. Okay. Anything else about cold fusion and your involvement? Then I'm going to turn in a little bit different direction.

Tom Dolan: That's all I think of right now.

Tom Grimshaw: Okay. Well, tell us a little bit about yourself. Where were you born? Where were you raised? Tell us a little about your life history, where you went to school and all that.

Tom Dolan: Okay. My father was an engineering professor at the University of Illinois. I grew up in Champaign, Illinois. Went to high school there. And I got a bachelor's degree in engineering mechanics from the university and spent two years in the Navy. That was 1961 to '63. I was an engineering officer on the USS Barry, DD-933, which is a destroyer. We participated in the Cuban Missile Crisis in 1962 when we went alongside the Soviet ship the Metallurg Anosov and an officer on our ship spoke to them in Russian and said, "Uncover the missiles." And they uncovered them. I got the idea it's important to learn the language of your adversaries. So when I went back to graduate school in nuclear engineering, I studied Russian. And when I got my PhD in 1970, I went to the Soviet Union for a year on an exchange program between US universities and Soviet universities. So I spent a month in Moscow and then nine months in Siberia at Novosibirsk State University. And then I went back to the US, became a faculty member at the University of Missouri Rolla for many years.

Tom Grimshaw: Okay. Okay. And that's when you met... That's when Dennis Pease was in your class, as you mentioned before.

Tom Dolan: Yes.

Tom Grimshaw: Okay. Well, I know a little bit about that school. I've never been on the campus, but I, myself, am a graduate of the South Dakota School of Mines. And at that time, when I graduated, the university in Rolla was called the Missouri School of Mines.

Tom Dolan: That's right.

Tom Grimshaw: Yeah. Anyway, that's an interesting story about those schools, but we won't go there today. Okay, so you were on the faculty at Rolla.

Tom Dolan: Yes.

Tom Grimshaw: And so you retired from that position? Or it changed positions, or?

Tom Dolan: There's still a lot of positions after.  
Tom Grimshaw: Okay.  
Tom Dolan: In 1989, I went to the Phillips Petroleum company. And then I was at the Idaho National Laboratory from 1989 to 2006, except for the years at the International Atomic Energy Agency in Vienna. I was Head of the Physics Section from 1995 to 2001.  
Tom Grimshaw: Okay.  
Tom Dolan: And in 2006, I retired from the Idaho lab and joined the faculty at the University of Illinois.  
Tom Grimshaw: Okay. Very good. It's interesting, I'm glad you brought up in your background about your father being at the university, because when you go on Wikipedia and look up Thomas J. Dolan you find him.  
Tom Dolan: I'll go ahead and try it. I'll do that. It's interesting.  
Tom Grimshaw: Yeah. Well, as part of these projects, I usually go on the web and see what the web has to say about the participant and there's some nice things out there about you, but nothing beyond more than trivial. It's always interesting to see. But anyway, it didn't take me long to figure out that you must have had a father at the University of Illinois.  
Tom Dolan: Yeah.  
Tom Grimshaw: Okay, good. Well, this has been great. Trying to think of any other questions. Your professional trajectory is very well presented in the two resumes that you sent me, the trajectory that you just now covered. So I usually end these, or near the end of these interviews, by asking whether or not you feel that this phenomenon is a real phenomenon and, well, let's start there then I'll ask some other questions later. Do you think cold fusion is a real phenomenon?  
Tom Dolan: Definitely. The transmutations are irrefutable.  
Tom Grimshaw: Okay. And, of course, you're involved with a particular line of research with Tionesta, but if you had plenty of money, what kind of experiments would you do? If you were the director of a new laboratory or something, what approach would you use to pursue this phenomenon and solve the problems?  
Tom Dolan: If I had plenty of money, I would employ 10 different groups to study 10 different field pathways.  
Tom Grimshaw: Okay. Okay, so obviously chemical and chemistry, and nuclear, and material science would be three candidates.  
Tom Dolan: Yes, different theoretical ideas to test with experiment.  
Tom Grimshaw: Okay.  
Tom Dolan: Different concepts of making practical applications.  
Tom Grimshaw: Okay.  
Tom Dolan: For example, Brillouin Energy has plans for marketing water heaters, and lattice energy converters (LEC) have ideas for miniature batteries.  
Tom Grimshaw: Using cold fusion.  
Tom Dolan: Yes.  
Tom Grimshaw: Okay. Interesting.  
Tom Dolan: There is a lot of ideas that need to be developed, supported.  
Tom Grimshaw: Yep. Yeah, it's a multifaceted phenomenon that's at the crossroads of a lot of different fields. Any other comments, or?

Tom Dolan: Well, I appreciate your interviewing.  
Tom Grimshaw: Okay. Well, what I've found is, as we get into this project... You don't currently have a laboratory, do you?  
Tom Dolan: That's right. I do not.  
Tom Grimshaw: And do you have any records, like hard copy records or electronic records, that you would like to see preserved in this project?  
Tom Dolan: The ones that I sent to you.  
Tom Grimshaw: Okay. Okay. I'll send you an email. There was one publication listed on Rockwell's LENR TENR site that he did not have a copy of, and I found it, but it cost \$39 to buy it. And I'll send you the reference and if you have a copy of it, perhaps you could send that to me as well.  
Tom Dolan: Thank you.  
Tom Grimshaw: Okay. All right. Well, we're going to wrap this up. Just by way of review, my name is Tom Grimshaw. I've been interviewing Tom Dolan about his involvement in the fabulous cold fusion field going back to March 23rd, 1989 when it was announced. I should mention that today is August, what'd I say? The 17th, I guess. Yeah.  
Tom Dolan: 16th. August 16th.  
Tom Grimshaw: August 16th, 2022. So with that, Tom, I'll go ahead and close this off and I'll have this transcribed and I'll send you the transcript so you can take a look at it to review it. Okay?  
Tom Dolan: Thank you, Tom.  
Tom Grimshaw: All right. Thank you. Take care. Bye  
Tom Dolan: Bye.

***Appendix C. Expanded List of Electronic Files (Bound Separately as  
Volume 2)***

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