CURRICULUM VITAE

Dr. Sean M. McDeavitt
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A. Education

1992	PhD	Purdue University, School of Nuclear Engineering, Nuclear Materials *Thesis: "Hot Isostatic Pressing of U-10Zr Alloy Nuclear Fuel by Coupled Grain Boundary Diffusion and Power-Law Creep"*
1990	MSNE	Purdue University, School of Nuclear Engineering, Nuclear Materials
1987	BSNE	Purdue University, School of Nuclear Engineering

B. Professional History

Texas A&M University (August 2006 to present)

9/2011 to present Texas A&M University, Department of Nuclear Engineering ***
- Associate Professor of Nuclear Engineering
- Associate Professor of Materials Science and Engineering (graduate program)

8/2006 to 8/2011 Texas A&M University, Department of Nuclear Engineering ***
- Assistant Professor of Nuclear Engineering
- Assistant Professor of Materials Science and Engineering (graduate program)

*** 7/2003 to Present Principal Investigator, Fuel Cycle and Materials Laboratory (FCML)
- *Materials and chemical processing, materials for advanced reactor fuels and structures, and waste immobilization and characterization*

Purdue University (August 2003 to August 2006)

7/2003 to 8/2006 Purdue University, School of Nuclear Engineering ***
- Associate Professor of Nuclear Engineering (non-tenured)

8/2002 to 12/2002 Visiting Associate Professor of Nuclear Engineering, Purdue University

Argonne National Laboratory (August 1991 to July 2003)

Chemical Technology Division
9700 S. Cass Ave, Argonne, IL

Argonne National Laboratory (cont'd)

Chemical Technology Division
Section Manager, Pyroprocess Development (2002 to July 2003)

Managed a multidisciplinary team of ~20 scientists and engineers to develop nuclear fuel cycle processes and materials. Examples:

- Inert anodes for oxygen evolution in a molten LiCl electrolyte at 650ºC.
- Electrochemical recovery of transuranic actinides from molten LiCl-KCl salts.
- Electrochemical reduction of oxide nuclear fuel (UO_2 plus waste) in molten LiCl.
- Advanced materials for pyrochemical processing.

Chemical Technology Division
Section Manager, Materials Development (1999 to 2002)

Managed a multidisciplinary team of ~10 scientists and engineers to develop materials solutions for the nuclear fuel cycle. Examples:

- Ceramic and metal waste form materials for high level radioactive waste disposal.
- Thoria-based cermet nuclear fuel with a Zr-matrix.
- Liquid metal corrosion for heavy metal coolants (i.e, molten Pb and Pb-Bi alloys).
- High temperature interaction of molten reactive metals with stable ceramics.
- Coating ceramic microspheres with Nb metal by chemical vapor deposition.

Chemical Technology Division
Nuclear Materials Engineer (Dec. 1992 to 1999)

Materials development projects included:

- Developed a family of Fe-Zr alloy waste forms to immobilize high-level waste.
- Characterization of microstructure and behavior of the Fe-Zr alloy waste forms.
- Engineering scale-up activities for hot-cell demonstration of the Fe-Zr alloy fabrication process.
- High temperature interaction studies to evaluate the thermochemical behavior of molten reactive metals in contact with stable ceramics.
- Participated in the engineering scale development of pyrochemical processes to recycle and manage spent nuclear fuel materials.

Materials and Components Technology Division
Lab-Grad Student Appointment (Aug. 1991 to Nov. 1992)

Participated in the development of the LIFE-Metal nuclear fuel performance model.

Temporary Academic Appointments

Fall 2002 Visiting Associate Professor of Nuclear Engineering, Purdue University
Fall 1990 Instructor, Purdue University

C. Academic Records

Courses Taught at Texas A&M University (Aug. 2006 to present)

COURSE NUMBER	COURSE TITLE	SEM	CRED	ENROLL MENT	EVAL. AVG.[1]
NUEN 661	Nuclear Fuel Performance	S12	3	7	TBD
NUEN 485	Directed Studies: Uranium Alloy Metallurgy	S12	3	1	•
NUEN 485	Directed Studies: Radiolysis of Methane	S12	3	1	•
NUEN 485	Directed Studies: Nuclear Fuel Reprocessing	S12	3	1	•
NUEN 485	Directed Studies: Zircaloy Cladding	F11	3	1	•
NUEN 485	Directed Studies: Nuclear Power Plant Systems	F11	3	1	•
NUEN 265	Materials Science for Nuclear Energy Applications	F11	3	50	4.26
NUEN 661	Nuclear Fuel Performance	S11	3	11	4.46
NUEN 485	Directed Studies: Fuel Irradiation Experiments	S11	2	1	•
NUEN 485	Directed Studies: Nuclear Reactor Accidents	S11	1	1	•
NUEN 465	Nuclear Materials Engineering	S11	3	16	3.72
NUEN 485	Directed Studies: Powder Coating Evaluations	F10	1	1	•
NUEN 265	Materials Science for Nuclear Energy Applications	F10	3	46	4.01
NUEN 661	Nuclear Fuel Performance	S10	3	9	4.15
NUEN 465	Nuclear Materials Engineering	S10	3	6	3.88
NUEN 485	Directed Studies: Uranium Powder Metallurgy - II	S10	3	1	•
NUEN 485	Directed Studies: BET Powder Analysis	S10	1	1	•
NUEN 265	Materials Science for Nuclear Energy Applications	F09	3	41	4.03
NUEN 485	Directed Studies: Uranium Powder Metallurgy	F09	1	1	•
NUEN 491	Undergraduate Research: Thermal Diffusivity Measurement	F09	1	1	•
NUEN 289	Materials Science for Nuclear Energy Applications	S09	3	16	4.64
NUEN 485	Directed Studies: Introduction to FRAPCON	S09	1	1	•
NUEN 485	Directed Studies: Neutron Activation of Nano Bi Metal	S09	3	1	•
NUEN 489[2,3]	Materials Science for Nuclear Energy Applications	F08	3	35	4.21
NUEN 678	Waste Management in the Nuclear Industry	F08	3	6	4.71
NUEN 489[3]	Nuclear Materials Engineering	S08	3	18	4.66
NUEN 485	Directed Studies: Thermophysical Property Measurement	S08	1	1	•
NUEN 689[2]	Nuclear Fuel Performance	F07	3	14	4.67
NUEN 489[2]	Materials Science for Nuclear Energy Applications	S07	3	9	4.39
NUEN 485	Directed Studies: Nuclear Fuel Performance Modeling	S07	1	1	•
NUEN 678	Waste Management in the Nuclear Industry	F06	3	6	3.96
NUEN 485	Directed Studies: Materials Science in Nuclear Engineering	F06	3	2	•

1 – "Evaluation Average" represents the Overall Mean student evaluation score based on 8 questions pertaining to Preparation, Assignments, Communication, Responsiveness, Academic Concern, Availability, Fairness, and Teaching (5=Excellent, 4=Very Good, 3=Good, 2=Does Not Perform Well, 1=Has Serious Deficiencies).

2 – Indicates the creation of a new course.

3 - NUEN 489 was offered under different titles in 2007 and 2008. The development plan evolved to create a required sophomore level course entitled "Materials Science for Nuclear Energy Applications" and an elective course entitled "Nuclear Materials Engineering."

Courses Taught at Purdue University (before Aug. 2006)

COURSE NUMBER	COURSE TITLE	SEM	CRED	ENROLL MENT	EVAL. SCORE[1]
NUCL 503	Radioactive Waste Management	S06	3	24	4.7
NUCL 597	Post-Irradiation Examination	S06	3	1	•
NUCL 120	Freshman Research Projects (Independent Study)	S06	1	2	•
NUCL 320	Introduction to Materials for Nuclear Applications	F05	3	50	4.3
NUCL 449	Senior Design Proposal	F05	1	28	4.7
ENGR 103	Intro. to Eng. Careers – Nuclear Materials Engineering	F05	1	17	•

* *Connotes student under the direction of S.M. McDeavitt.*

** *Connotes a post-doctoral research assistant under the direction of S.M. McDeavitt*

NUCL 597	Materials Thermochemistry (Independent Study)	Su05	1	1	•
NUCL 503	Radioactive Waste Management	S05	3	15	4.6
NUCL 450	Design in Nuclear Engineering	S05	3	20	4.9
NUCL 120	Freshman Research Projects (Independent Study)	S05	1	3	•
NUCL 581	Technical Writing in Nuclear Engineering	F04	1	19	4.5
NUCL 597	Nuclear Reactor Operations (Independent Study)	F04	3	1	•
NUCL 200	Introduction to Nuclear Engineering	S04	3	109	4.2
NUCL 698	Nuclear Engineering Graduate Student Seminar	S04	0	39	•
NUCL 120	Freshman Research Projects (Independent Study)	S04	1	2	•
NUCL 200	Introduction to Nuclear Engineering	F03	3	140	4.3
ENGR 103J	Introduction to Eng. Careers - Radiation Effects	F03	1	17	4.5
NUCL 305L	Nuclear Engineering Undergraduate Laboratory-II	F03	2	7	•
NUCL 698	Nuclear Engineering Graduate Student Seminar	F03	0	44	•
NUCL 320	Introduction to Materials for Nuclear Applications	F02	3	26	4.7
NUCL 211	Fundamentals of Nuclear Reactors	F90	3	13	4.1

1 – Average response to "Overall, I would rate this instructor as" (Scores based on a 5.0 scale with 5 as the highest and 1 as the lowest)

Student Development Activity

Graduate Degrees in Progress at Texas A&M University:

NAME	DEGREE	EST. COMP.	DRAFT THESIS TITLE
S. Ahn	PhD	8/2013	U-Zr Alloy Nuclear Fuel Performance
M. Arietta	PhD	5/2016	FB-CVD Coatings for Nuclear Fuel Applications
G. Helmreich	PhD	5/2014	Metal Fuel Processing Methods
A.J. Parkison	PhD	12/2012	Zircaloy Recycle via Iodide Volatility
W.J. Sames	PhD	5/2015	Delayed hydride cracking in used nuclear fuel
A.R. Totemeier	PhD	12/2012	Cermet Fuel Development w/ Irradiation Study
S. Irukuvarghula	PhD	5/2013	U-Zr Alloy Nuclear Fuel Performance
B. Barnhart	MSNE	5/2013	Characterization of Zr-Fe-Cu Alloys for Inert Fuel Matrix
B. Blamer	MSNE	8/2013	Extrusion of U-Zr alloy tubular fuel form
D.R. Eichel	MSNE	8/2013	ATR Irradiation for U-Zr Alloy Nuclear Fuel
C. Garcia	MSNE	12/2012	High Conductivity UO_2-BeO Nuclear Fuel
J.C. Martinez	MSNE	5/2014	U-Zr alloy casting methods
C.A. Thompson	MSNE	12/2012	U-Zr Process Development – Rotating Electrode

Graduate Degrees Completed:

NAME	DEGREE	GRAD DATE	THESIS TITLE
M.Y Arietta	MSNE	8/2012	Low Temperature Chemical Vapor Deposition of Zirconium Nitride in a Fluidized Bed Reactor
S.H. Kuhr	MSNE	8/2012	An Electrolytic Method to Form Zirconium Hydride Phases in Zirconium Alloys with Morphologies Similar to Hydrides Formed in Used Nuclear Fuel
C.J. Humrickhouse	MSNE	5/2012	Characterization of Thermal Properties of Depleted Uranium Metal Microspheres
W.J. Sames	MEN	5/2012	Materials Science and Engineering Program Non-Thesis Master of Engineering
J. Creasy	MSNE	12/2011	Thermal Properties of uranium-molybdenum alloys: phase decomposition effects of heat treatments
J. Hausaman	MSNE	12/2011	Hot Extrusion of Alpha Phase Uranium-Zirconium Alloys for TRU-Burning Fast Reactors

* *Connotes student under the direction of S.M. McDeavitt.*
** *Connotes a post-doctoral research assistant under the direction of S.M. McDeavitt*

G. Helmreich		MSNE	12/2010	Characterization of Alpha-Phase Sintering of Uranium and Uranium-Zirconium Alloys for Advanced Nuclear Fuel Applications
T.R. Hogelin		MSNE	12/2010	Radioactive Flow Characterization for Real-Time Detection Systems in UREX+ Nuclear Fuel Reprocessing
R.D. Kelley		PhD (INEN)	8/2010	Design of an Integrated System to Recycle Zircaloy Cladding using a Hydride-Milling-Dehydride Process
M.J. Naramore		MSNE	8/2010	High Thermal Conductivity UO2-BeO Nuclear Fuel: Neutronic Performance Assessments and Overview of Fabrication
L.H. Ortega		PhD (MSEN)	12/2009	Sintered Bentonite Ceramics for the Immobilization of Cesium- and Strontium-Bearing Radioactive Waste
B. Goddard		MSNE	12/2009	Development of a Real-Time Detection Strategy for Material Accountancy and Process Monitoring during Nuclear Fuel Reprocessing using the UREX+3a Method
D.J. Garnetti		MSNE	12/2009	Uranium Powder Production via Hydride Formation and Alpha Phase Sintering of Uranium and Uranium-Zirconium Alloys for Advanced Nuclear Fuel Applications
J.J. Wegener		MSNE	12/2008	Production of Cerium Oxide Microspheres by an Internal Gelation Sol-Gel Process
A.J. Parkison		MSNE	5/2008	Hydride Production in Zircaloy-4 as a Function of Time and Temperature
P.A. Mews		MSNE	12/2007	Evaluation of Zirconium-Iron-Rhenium Alloys as Surrogates for a Technetium Alloy Waste Form
Purdue University	L.H. Ortega	MSNE	8/2006	Engineered Storage Forms for the Immobilization of Radioactive Cesium and Strontium from Spent Nuclear Fuel
	A.C. Slaga	MSNE	8/2006	Chemical Vapor Deposition of Porous Silicon Carbide onto Ceramic Microspheres Using a Fluidized Bed Reactor
	A.R. Totemeier	MSNE	8/2006	Evaluation of a Zirconium-Matrix Cermet for the Storage and Transmutation of Transuranic Isotopes
	D.T. Kraemer	MSNE	8/2005	Establishing Methods for Recycling Spent Zircaloy Cladding Using a Hydride-Dehydride Processing Route

Participation as a Graduate Committee member (partial listing):

NAME	DEGREE	DATE	DEPARTMENT
R. Balerio	MSNE	TBD	Nuclear Engineering
J.D. Burns	PhD	TBD	Chemistry
T. Chen	MSNE	TBD	Nuclear Engineering
M.M. Cuvelier	MSNE	TBD	Nuclear Engineering
T. Duong	PhD	TBD	Mechanical Engineering
B. Goddard	PhD	TBD	Nuclear Engineering
L. Hu	PhD	TBD	Materials Science & Engineering
Z.A. Kulage	PhD	TBD	Nuclear Engineering
A.G. LeCoq	MSNE	TBD	Nuclear Engineering
H. Lee	PhD	TBD	Nuclear Engineering
M.S. Martin	PhD	TBD	Nuclear Engineering
R.R. Metcalf	PhD	TBD	Nuclear Engineering
M.T. Meyers	PhD	TBD	Nuclear Engineering
M.L. Pritchard	PhD	TBD	Nuclear Engineering
J. Smith	MSNE	TBD	Nuclear Engineering
J. Wallace	MSNE	TBD	Nuclear Engineering
A.J. Wagers	PhD	5/2012	Physics
K. Jeon	MS	8/2011	Mechanical Engineering
S. Bajaj	MS	5/2011	Mechanical Engineering

* *Connotes student under the direction of S.M. McDeavitt.*
** *Connotes a post-doctoral research assistant under the direction of S.M. McDeavitt*

D.E. Ames II	PhD	8/2010	Nuclear Engineering
J. Lapinskas	PhD	8/2010	Purdue Univ. – Nucl. Eng.
T.G. Lewis III	PhD	8/2010	Nuclear Engineering
A.S. Stafford	MSNE	8/2010	Nuclear Engineering
J. Webster	MSNE	82010	Purdue Univ. – Nucl. Eng.
A.B. Alajo (Deji)	Ph.D	5/2010	Nuclear Engineering
B. Barkley	MS	5/2010	Mechanical Engineering
J.S. Feener	MSNE	5/2010	Nuclear Engineering
M.S. Martin	MSNE	5/2010	Nuclear Engineering
M.T. Meyers	MSNE	5/2010	Nuclear Engineering
A. Aitkaliyeva	MSNE	8/2009	Nuclear Engineering
J.J. Carter	PhD	5/2009	Nuclear Engineering
M.L. Pritchard	MSNE	2008	Nuclear Engineering
J. Walter	PhD	2007	Purdue University - NUCL
A. Pollman	MSNE	2004	Purdue University - NUCL
C.T. Snyder	MS	2003	UIUC – Civil and Mat. Engr.

Undergraduate Research Projects:

	NAME	SEM	PROJECT	TITLE
	N.J. Meli	S12	NUEN 485: Ind. Study (3 credit)	Uranium Alloy Metallurgy
	J.T. Clemens	S12	NUEN 485: Ind. Study (3 credit)	Radiolysis of Methane
	A. Faizullah	S12	NUEN 485: Ind. Study (3 credit)	Nuclear Fuel Reprocessing
	L.W. Merchant	F11	NUEN 485: Ind. Study (3 credit)	Zircaloy Cladding
	S.J. Smiley	F11	NUEN 485: Ind. Study (3 credit)	Nuclear Power Plant Systems
	D.R. Eichel	S11	NUEN 485: Ind. Study (2 credit)	Fuel Irradiation Experiments
	A. Rakhmzhanov	S11	NUEN 485: Ind. Study (1 credit)	Nuclear Reactor Accidents
	J. Borgmeyer	F10	NUEN 485: Ind. Study (1 credit)	Powder Coating Evaluations
	R. Miller	S10	NUEN 485: Ind. Study (1 credit)	BET Powder Analysis
	W.J. Sames	S10	Undergraduate Research Fellow	Uranium Powder Metallurgy (NUEN 485: 3 cred.)
	W.J. Sames	F09	Undergraduate Research Fellow	Uranium Powder Metallurgy (NUEN 485: 1 cred.)
	M.R. Greer	F09	NUEN 491: Undergr. Research	Thermal Diffusivity Measurement
	N.M. Lynn	S09	Undergraduate Research Scholar	High Conductivity UO_2-BeO nuclear fuel
	W.D. Duncan	S09	NUEN 485: Ind. Study (3credit)	Neutron Activation of NanoBi Metal
	N.M. Lynn	S09	NUEN 485: Ind. Study (1credit)	Introduction to FRAPCON
	J.A. Hausaman	S08	NUEN 485: Ind. Study (1credit)	Thermochemical Property Measurments
	C. Ryan	S07	NUEN 485: Ind. Study (1credit)	Nuclear Fuel Performance Modeling
	C. Ryan	F06	NUEN 485: Ind. Study (3credit)	Materials Science for Nuclear Energy Applications
	K.A Wright	F06	NUEN 485: Ind. Study (3credit)	Materials Science for Nuclear Energy Applications
Purdue University	A.J. Parkison	F06	Purdue SURF Internship	FCML Research Assistant
Purdue University	C. Clark	S05	NUCL 120 – Fresh. Res. Project	Heavy Liquid Metal Coolants
Purdue University	D. Rohan	S05	NUCL 120 – Fresh. Res. Project	Fuel Fabrication for the Gas Fast Reactor System
Purdue University	A. Webster	S05	NUCL 120 – Fresh. Res. Project	Nucl. Eng. Appl. for Space Propulsion
Purdue University	E.C. Howell	Su04	Purdue SURF Internship	DAQ for Nuclear Materials Experiments
Purdue University	B. Haan	S04	NUCL 120 – Fresh. Res. Project	Fabrication Method for TRISO Fuel Particles
Purdue University	J. Anglin	S04	NUCL 120 – Fresh. Res. Project	Corrosion of Zircaloy Cladding

* *Connotes student under the direction of S.M. McDeavitt.*
** *Connotes a post-doctoral research assistant under the direction of S.M. McDeavitt*

D. Honors and Awards

S.M. McDeavitt Awards

2012	American Nuclear Society, Materials Science and Technology Division, "2010 Significant Contribution Award" for paper entitled ".
2010	Charles H. Barclay Jr. '45 Faculty Fellow from Texas A&M University College of Engineering.
2005	Purdue Research Foundation International Travel Grant for travel to 2005 International Congress on Advances in Nuclear Power Plants in Seoul, South Korea.
2004	American Nuclear Society, Materials Science and Technology Division, "2002 Significant Contribution Award" for research.
2003	"Outstanding Mentor Award" from 2002 U.S Department of Energy education programs.
2002	Argonne National Laboratory, "Critical Skills" Award.
1996	American Nuclear Society Literary Award ("Best Paper") from the ANS Materials Science and Technology Division.
1995	Argonne National Laboratory Pacesetter Award.
1990-91	Purdue University, Magoon Teaching Award for graduate student teaching.
1987-88	Institute of Nuclear Power Operations (INPO) Graduate Fellowship in Nuclear Engineering, Purdue University.
1986-87	Institute of Nuclear Power Operations (INPO) Undergraduate Scholarship in Nuclear Engineering, Purdue University.

Awards Received by S.M. McDeavitt's Students

2012	William J. Sames, 2012 DOE Nuclear Energy University Programs Graduate Fellowship
2011	Carissa J. Humrickhouse, First Place Poster (Golden Neutron Award), 2011Advanced Test Reactor National Scientific User Facility (ATR NSUF) User's Week
2011	Adam J. Parkison, First Place Paper – Nuclear Fuels, 2011 Innovations in Fuel Cycle Research Award
2011	William J. Sames, Undergraduate Prize, 2011 Innovations in Fuel Cycle Research Award
2011	William J. Sames, 2010 Level II National Excellence Fellowship
2010	Marie Arietta, 2010 Sandia National Laboratory Fellowship
2009	Braden Goddard, 2009 Roy G. Post Foundation Scholarship
2009	Braden Goddard, 2009 J.D. Institute of Nuclear Materials Management Williams Student Paper Award, First Place
2007	K.A. Wright, U.S. Department of Energy Advanced Fuel Cycle Initiative (AFCI) Fellowship (to Texas A&M).
2007	P.A. Mews, ANS Student Conference - Best Paper.
2006	A.R. Totemeier, 2006 Roy G. Post Scholarship (to Texas A&M).
2006	P.A. Mews, U.S. Department of Energy Advanced Fuel Cycle Initiative (AFCI) Fellowship (to Texas A&M).
2006	K.A. Prater, U.S. Department of Energy Office of Civilian and Radioactive Waste Management (OCRWM) Fellowship (to University of Michigan).
2004	J.J. Wegener, Institute of Nuclear Power Operations (INPO) Fellowship (to Purdue University).

E. Professional Service

Professional Society Activities

The American Nuclear Society (ANS) – Active Member

1. Materials Science and Technology Division Executive Committee (2012 to present)
2. Materials Science and Technology Division Executive Committee: University Liaison (2007 to 2008)
3. Materials Science and Technology Division Executive Committee (2004 to 2007)
4. Materials Science and Technology Division Executive Committee (1999 to 2002)

The Minerals, Metals, and Materials Society (TMS) – Active Member

1. Member – Joint ASM/TMS Nuclear Materials Committee (2005 to 2008)
2. Vice Chair – Joint ASM/TMS Nuclear Materials Committee (2004 to 2005)
3. Secretary – Joint ASM/TMS Nuclear Materials Committee (2002 to 2004)
4. Member – Joint ASM/TMS Nuclear Materials Committee (1999 to 2006)
5. Chair – Reactive Metals Committee (2000 to 2003)
6. Member – Reactive Metals Committee (1996 to 2003)

Executive Committee of the Users Organization for the Advanced Test Reactor National Scientific User Facility (ATR NSUF) (2011-2012)

Technical Symposia Organization

1. Technical Program Committee, "2010 LWR Fuel Performance Meeting/TopFuel/WRFPM", September 26-29 (2010) Orlando, Florida, USA.
2. Session Organization Committee: "The 6th Pacific Rim International Conference on Advanced Materials and Processing (PRICM-6)," Jeju Island, Korea, November 6-9 (2007), Session #14: Energetic Particles: Materials Interactions and Nuclear Materials.
3. Technical Program Committee: "Global 2007: Advanced Nuclear Fuel Cycles and Systems," Boise, ID, September 9-13 (2007).
4. Session Organizer: "Materials Issues for Advanced Nuclear Systems," 134th TMS Annual Meeting, February 13-17, 2005, San Francisco, CA. (Co-Organizer).
5. Session Organizer: "Actinide Materials: Processing, Characterization, and Behavior," 132nd TMS Annual Meeting, March 2-6, 2003, San Diego, CA. (Primary Organizer, 31 Papers).
6. Session Organizer: "Advances in Molten Salt Processing Technology," 131st TMS Annual Meeting, February 17-21, 2002, Seattle, WA. (Sole Organizer, 13 Papers).
7. Session Organizer: "Reactive Metals," 131st TMS Annual Meeting, February 17-21, 2002, Seattle, WA. (Sole Organizer, 5 Papers).

Other Professional Activities and Service

1. Member of Project Independent Review panel for the U.S. Department of Energy project entitled "Overall Signature Work on Aqueous and Dry Processing" April 24, 2008
2. Texas A&M Department of Nuclear Engineering Representative to *Nuclear Power Engineering 2007* at the Indian Institute of Technology, Kanpur, India, July 13, 2007.
3. Texas A&M Department of Nuclear Engineering Representative at the U.S. Department of Energy's "Academic Meeting on the Advanced Test Reactor Transitioning to a User Facility," January 29, 2007, Hebron, Ky. (near Cincinnati, OH).
4. Proposal Reviewer for the U.S. Civilian Research & Development Foundation (CRDF) for the Independent States of the Former Soviet Union, 2006.

5. Journal Reviewer, **Nuclear Engineering and Design,** 2006 to present.
6. Journal Reviewer, **Nuclear Technology,** 2003 to present.
7. Journal Reviewer, **Journal of Materials Engineering and Performance,** 2004.
8. Editorial Advisor to ***JOM*** (TMS publication) 2000 and 2003.
9. Proposal Reviewer, U.S. Department of Energy, Nuclear Engineering and Education Research (NEER) program, 2003.
10. Proposal Reviewer, U.S. Department of Energy, Small Business Innovative Research (SBIR) program, 1998 to present..
11. Co-chair of the Nuclear Materials Subgroup of the Argonne Materials Coordinating Committee (AMCC), 2001 to 2003.
12. Member of the Advisory Committee to the School of Nuclear Engineering, Purdue University, 1999 and 2002.

Texas A&M University Service

1.	College of Engineering ad hoc committee to consider the formation of a Department of Materials Science & Engineering	May 2012 to present
2.	College of Engineering Strategic Plan Research Subcommittee	Feb. 2012 to May 2012
3.	NUEN Department Head Search Committee	Jan. 2012 to present
4.	NUEN Safety Committee	Spring 2011 to present
5.	NUEN Faculty Search Committees (including NSI positions)	Fall 2009 to present
6.	NUEN: Space & Facilities Committee (Chair 2009 to present)	Jan. 2008 to present
7.	TEES: Reactor Safety Board	Sept. 2007 to present
8.	NUEN: PhD Qualifying Exam Committee (Nuclear Materials)	Jan. 2008 to present
9.	NUEN: PhD Qualifying Exam Committees (Reactor Engineering)	Jan. 2007 to present
10.	NUEN: PhD Qualifying Exam Committee (Reactor Theory)	Jan. 2007 to present
11.	NUEN: PhD Qualifying Exam Committee (Interactions)	Jan. 2007 to present
12.	NUEN: PhD Curriculum Committee	Jan. 2008 to 2009
13.	NUEN: Graduate Affairs Committee	Jan. 2008 to 2009
14.	NUEN High School Recruiting Visit: Alamo Heights High School	Dec. 7, 2007
15.	NUEN: Laboratory Management Committee, Chair	Jan. 2007 to Dec. 2008
16.	NUEN: PhD Qualifying Exam Committee (Applied Health Physics)	Jan. 2007
17.	NUEN: Ad hoc Committee to review PhD Qualifying Oral Exam	Dec. 2006 to Jan. 2007

Purdue University Service

1.	Purdue University: Faculty Senate	June 2004 to Aug. 2006
2.	Purdue University: Resource Policy Committee	June 2004 to Aug. 2006
3.	Purdue University: Military Programs Committee	May 2005 to Aug. 2006
4.	Purdue University: Committee on Reactor Operations	July 2003 to Aug. 2006
5.	Purdue University: Radiation Safety Committee	Sept. 2003 to Aug. 2006
6.	College of Engineering: K-12 Eng. and Outreach Task Force	2005 to Aug. 2006
7.	College of Engineering: Eng. Recruitment Plan Committee	2005 to Aug. 2006
8.	College of Engineering: Awards Committee	2004 to Aug. 2006
9.	Freshman Engineering Curriculum Committee	2003 to 2004
10.	Nuclear Engineering: Undergraduate Committee	Sept. 2003 to Aug. 2006
11.	Nuclear Engineering: Graduate Committee	Sept. 2003 to Aug. 2006
12.	Nuclear Engineering: Chair, Safety Committee	Sept. 2005 to Aug. 2006
13.	Nuclear Engineering: Safety Committee	Sept. 2003 to 2005

F. Research Grants and Contracts

Research Grants at Academic Institutions (Texas A&M University since Aug. 2006)

Grant Title	Dates	Sponsor	Funding to S. McDeavitt	Total Funding
Prototype Demonstration of Gamma-Blind Tensioned Metastable Fluid Neutron / Multiplicity/Alpha Detector-Real Time Methods for Advanced Fuel Cycle Applications	*Est. 10/2012 to 9/2015 (in negotiation)*	US Department of Energy – Nuclear Energy University Programs	~$250,000 (Lead PI)	$875,000
Advanced Metallic Nuclear Fuels: Design and Development: (addendum)	Extended to 12/31/ 2014	TerraPower, Intellectual Ventures, LLC	$1,040,874	$1,040,874
RERTR Fuel Development: Particle Coatings & Thermal Properties (addendum)	Extended to May 22, 2013	Idaho National Laboratory	$110,000	$110,000
Fuel Aging in Storage and Transportation (FAST): Accelerated Characterization and Performance Assessment of the Used Nuclear Fuel Storage System	12/15/2011-12/14/2015	US Department of Energy – Nuclear Energy University Programs Integrated Research Project	~$650,000 (Lead PI)	$4,500,000
Fuel Manufacturing Development for an Advanced Composite Nuclear Fuel (addendum)	Extended to 9/30/2014	Lawrence Livermore National Laboratory	$157,500	$157,500
TAMU/LLNL Partnership	10/1/2012 to 9/30/2014	Lawrence Livermore National Laboratory	$157,500 (1 of 18 Co-PIs)	$2,448,000
High Thermal Conductivity Oxide Nuclear Fuels: Concept Design and Preparation for Irradiation Testing	4/1/2011-3/31/2013	IBC Advanced Alloys Corp.	~$172,000	$342,524
Fuel Manufacturing Development for an Advanced Composite Nuclear Fuel	1/1/2011-12/30/2011	Lawrence Livermore National Laboratory	$100,000	$100,000
Advanced Metallic Nuclear Fuels: Design and Development	6/1/2010-6/30/2013	TerraPower, Intellectual Ventures, LLC	$1,419,896	$1,419,896
Irradiation Behavior and Performance of a Uranium-Zirconium Metal Alloy Fuel	Start Date Jul. 1, 2010	Department of Energy Advanced Test Reactor National Scientific User Facility	~$50,000 over course of expt.	~$50,000 w/ irrad. and PIE services
RERTR Fuel Development: Particle Coatings & Thermal Properties	Jun. 2010 to Dec. 2011	Idaho National Laboratory	$109,879	$109,879
Zirconium Recovery from Spent Cladding Using an Iodide Volatility Process	Jan. to Sept. 2010	Lockheed Martin, Inc. - Oak Ridge National Lab	$20,000	$20,000
Fuel Performance Experiments and Modeling: Fission Gas Bubble Nucleation and Growth in Alloy Nuclear Fuels	Oct. 2009 to Sept. 2012	US Department of Energy – Nuclear Energy University Programs	$708,659 (Lead PI)	$1,476,231
High Conductivity Fuel Research	Sept. 2008 to Aug. 2010	IBC Advanced Alloys (Subcontract from Purdue University)	$325,000	$325,000

* *Connotes student under the direction of S.M. McDeavitt.*

** *Connotes a post-doctoral research assistant under the direction of S.M. McDeavitt*

Fuel Development Support: U/Mo Fuel Development for the Global Threat Reduction Initiative	Aug. 2008 to Aug. 2009	Idaho National Engineering & Environmental Laboratory	$28,233 (Co-PI)	$56,466
A Framework for Developing Novel Detection Systems Focused on Interdicting Shielded HEU	Sept. 2008 to Aug. 2009	US Department of Homeland Security	~$25,000 (Co-PI)	$1,500,000
NERI Consortium for Real-Time Detection of Actinide Compositions in the UREX+ Process	Oct. 2007 to Sept. 2011	US Department of Energy – Nuclear Energy Research Initiative for Consortia (NERI-C)	~$375,000 (Consortium Lead PI)	$1,885,498
Fuel Cycle and Materials Laboratory Capability Upgrade: Themophysical Property Analyses for Advanced Fuels	Aug. 2007 to Aug. 2008	US Department of Energy – GNEP Readiness	$100,000	$100,000
Safety Curriculum Development to Facilitate Nuclear Energy in the 21st Century	July 2007 to June 2008	US Nuclear Regulatory Commission (NRC)	~$12,000 (Co-PI)	$200,000
Powder Metallurgy of Uranium Alloy Fuels for TRU-Burning Fast Reactors	April 2007 to March 2010	US Department of Energy – Nuclear Energy Research Initiative (NERI)	$414,550	$414,550

Research Grants at Academic Institutions (continued)

	Grant Title	Dates	Sponsor	Funding to S. McDeavitt	Total Funding
Purdue University	Engineered Materials for Cesium and Strontium Storage ***(sub. ~$219,300 to TAMU after 7/2006)***	April 2006 to Dec. 2009	US Department of Energy – Nuclear Energy Research Initiative (NERI)	$254,000	$254,000
	Development of an engineered product storage concept for the UREX+1 combined transuranic / lanthanide product streams ***(sub. ~$287,364 to TAMU after 7/2006)***	April 2005 to March 2009	US Department of Energy – Nuclear Energy Research Initiative (NERI)	$525,000 (Lead PI)	$900,000
	Advanced Nuclear Fuel Fabrication and Testing	April 2005 to May 2006	Bechtel Energy Alliance LLC/DOE	$80,725	$80,725
	Ceramic-Liquid Metal Interactions at Elevated Temperatures: Developing Ti, Zr, and Hf Alloys for High Temperature Joining	July 2005 to June 2006	Purdue Research Foundation	$14,912	$14,912
	Purdue Research Foundation International Travel Grant: 2005 International Congress on Advances in Nuclear Power Plants in Seoul, South Korea	May 2005	Purdue Research Foundation	$1,000	$1,000
	University Reactor Instrumentation	June 2005 to May 2006	US Department of Energy	$11,400	$11,400
	Year 4 Reactor Sharing	June 2005 to May 2006	US Department of Energy	$9,700	$9,700
	Year 3 Reactor Sharing	June 2004 to May 2005	US Department of Energy	$10,000	$10,000
	Creep of Irradiated Zircaloy	Sept.2004 to Aug. 2005	Argonne National Laboratory	$13,277	$13,277

* *Connotes student under the direction of S.M. McDeavitt.*
** *Connotes a post-doctoral research assistant under the direction of S.M. McDeavitt*

Peer-Reviewed Grants at Argonne National Laboratory (Beyond Program Funding)

Grant Title	Dates	Sponsor
Development of Structural Materials to Enable the Electrochemical Reduction of Spent Oxide Nuclear Fuel in a Molten Salt Electrolyte *(Collaborating Nation: South Korea)*	2003 to 2005 (original PI)	US Department of Energy – 2003 International Nuclear Energy Research Initiative (I-NERI)
Integrated Nuclear and Hydrogen-Based Energy Supply/Carrier System	2001 to 2003 (co-PI: 02-03)	US Department of Energy – 2000 Nuclear Energy Research Initiative (NERI)
Fuel for a Once-Through Cycle – $(Th,U)O_2$ in a Metal Matrix	2000 to 2003 (Lead PI)	US Department of Energy – 1999 Nuclear Energy Research Initiative (NERI)
Evaluation of TRU-Bearing Disposal Alloys	1994 to 1997 (Co-PI)	Argonne National Laboratory LDRD Program

G. Publications and Presentations

Refereed Publications

1. B.C. Archambault, J.R. Lapinskas, J. Wang, J.A. Webster, **S.M. McDeavitt**, and R.P. Taleyarkhan, "Ascertaining Directionality Information from Incident Nuclear Radiation," Nuclear Engineering and Design, 241(10): 4299-4305 (2011).

2. **S.M. McDeavitt**, J.C. Ragusa, S.T. Revankar, A.A. Solomon, and J. Malone, "A high-conductivity oxide fuel concept," Nuclear Engineering International, 56 (682), 40-42 (2011).

3. A.J. Parkison* and **S.M. McDeavitt**, "Hydride Formation Process Development for the Powder Metallurgical Recycle of Zircaloy," Metallurgical and Materials Transactions A, 42A: 192-201 (2011).
   2011 Innovations in Fuel Cycle Research Award
   Editor's Choice for Open Access Publication

4. Luis H. Ortega*, Michael D. Kaminski and **S.M. McDeavitt,** "Pollucite and Feldspar Formation in Sintered Bentonite for Nuclear Waste Immobilization," Applied Clay Science, 50(4): 594-599 (2010). *(June 2012: GS Citations = 1)*

5. B. Goddard*, W.S. Charlton and **S.M. McDeavitt**, "Development of a Real-Time Detection Strategy for Process Monitoring during Nuclear Fuel Reprocessing using the UREX+3a Method," Nuclear Engineering and Design, 240(11):3904-3909 (2010).

6. J. Lapinskas, S. Zielinski, J. A. Webster, R. P. Taleyarkhan and **S.M. McDeavitt**, and Y. Xu "Tension Metastable Fluid Detection Systems for Special Nuclear Material Detection and Monitoring," Nuclear Engineering and Design, 240(10): 2866-2871 (2010). *(June 2012: GS Citations = 3)*

7. E.G. Fu, J. Carter, M. Martin, Q. Xie, X. Z., Y.Q. Wang, R. Littleton, **S.M. McDeavitt**, and L. Shao, "Ar-ion-milling-induced structural changes of $Cu_{50}Zr_{45}Ti_5$ metallic glass," Nuclear Instruments and Methods in Physics Research Section B, 268: 545 (2010). *(June 2012: GS Citations = 4)*

8. B. Goddard*, W.S. Charlton, and **S.M. McDeavitt**, "Real-Time Detection of UREX+3a Extraction Streams for Materials Accountancy," Journal of Nuclear Materials Management, 38(1): 34-39 (2009). *(June 2012: GS Citations = 1)*

9. A.R. Totemeier* and **S.M. McDeavitt**, "Powder Metallurgical Fabrication of Zirconium Matrix Cermet Nuclear Fuels," Journal of Materials Science, 44(20): 5494-5500 (2009). *(June 2012: GS Citations = 1)*

10. J. Carter, E.G. Fu, M. Martin, G. Xie, X. Zhang, Y.Q. Wang, D. Wijesundera, X.M. Wang, Wei-Kan Chu, S.M. McDeavitt and L. Shao, "Ion Irradiation Induced Nanocrystal Formation in Amorphous $Zr_{55}Cu_{30}Al_{10}Ni_5$ Alloy," Nuclear Instruments and Methods in Physics Research Section B, 267(17): 2827-2831 (2009). *(June 2012: GS Citations = 8)*

11. **S.M. McDeavitt**, A. Parkison*, A.R. Totemeier* and J.J. Wegener* "Fabrication of Cermet Nuclear Fuels Designed for the Transmutation of Transuranic Isotopes," Materials Science Forum, 561-565: 1733-1736 (2007). *(June 2012: GS Citations = 1)*

12. J. Carter**,** E. Fu, **S.M. McDeavitt**, X. Zhang, G. Xie and L. Shao**,** "Characterization of High Strength Alloys Formed by Ion Irradiation of Metallic Glasses," Materials Science Forum, 561-565: 1737-1740 (2007). *(June 2012: GS Citations = 1)*

13. **S.M. McDeavitt**, Y. Xu, T.J. Downar and A.A. Solomon "Zirconium Matrix Cermet for a Mixed Uranium-Thorium Oxide Fuel in a SBWR," Nuclear Technology 157(1): 37-52 (2007). *(June 2012: GS Citations = 2)*

14. J. E. Indacochea, A. Polar and **S. M. McDeavitt**, "Challenges in Joining Advanced Ceramic Materials: Interface Formation of Ceramic/Metal High-Temperature Brazes," Materials Science Forum, 502: 7-12 (2005).

15. **S. M. McDeavitt**, G. W. Billings, and J. E. Indacochea, "High Temperature Interaction Behavior at Liquid Metal-Ceramic Interfaces," ASM Journal of Materials Engineering and Performance, 11(4): 392-401 (2002).

16. **S. M. McDeavitt**, G. W. Billings, and J. E. Indacochea, "Interfacial Reactions of Zirconium and Zirconium-Alloy Liquid Metals with Beryllia at Elevated Temperatures," Journal of Materials Science, 37: 3765-3776 (2002). *(June 2012: GS Citations = 1)*

17. J. E. Indacochea, **S. M. McDeavitt**, and G. W. Billings, "Elevated Temperature Interactions of Dissimilar Materials," Journal of Advanced Engineering Materials, 3(11): 895-901 (2001). *(June 2012: GS Citations = 2)*

18. D. P. Abraham, J. W. Richardson Jr., and **S. M. McDeavitt**, "Microscopy and Neutron Diffraction Study of a Zirconium-8 wt% Stainless Alloy," Journal of Materials Science., 36(21): 5143-5154 (2001). *(June 2012: GS Citations = 4)*

19. J.J. Laidler, L. Burris, E.D. Collins, J. Duguid, R.N. Henry, J. Hill, E.J. Karell, **S.M. McDeavitt**, M. Thompson, M.A. Williamson, and J.L. Willit, "Chemical Partitioning Technologies for an ATW System," Progress in Nuclear Energy, 38(1-2): 65-79 (2001). *(June 2012: GS Citations = 26)*

20. D. D. Keiser, D. P. Abraham, W. Sinkler, J. W. Richardson, and **S. M. McDeavitt**, "Actinide Distribution in Stainless Steel-15 wt% Zirconium High-Level Nuclear Waste Form," Journal of Nuclear Materials, 279: 234-244 (2000). *(June 2012: GS Citations = 18)*

21. L. Leibowitz, **S. M. McDeavitt**, D. G. Graczyk, and F. P. Smith, "Removal of Lithium Antimonide from a Radioactive Glovebox," Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, 4(4): 163-164 (2000).

22. D.P. Abraham, L.J. Simpson, M.J. DeVries, and **S.M. McDeavitt**, "Corrosion Testing of Stainless Steel-Zirconium Metal Waste Forms," Materials Research Society Proceedings, 556: 945-952 (1999). *(June 2012: GS Citations = 2)*

23. **S. M. McDeavitt**, D. P. Abraham**, and J. Y. Park, "Evaluation of Stainless Steel Zirconium Alloys as High Level Nuclear Waste Forms," Journal of Nuclear Materials, 257(1): 21-34 (1998). *(June 2012: GS Citations = 35)*

24. D. P. Abraham**, J. W. Richardson, and **S. M. McDeavitt**, "Laves Intermetallics in Stainless

Steel-Zirconium Alloys," Mater. Sci. Eng. A, 239-240: 658-664 (1997). *(June 2012: GS Citations = 5)*

25. D. P. Abraham**, J. W. Richardson, and **S. M. McDeavitt**, "Formation of the $Fe_{23}Zr_6$ Phase in an Fe-Zr Alloy," Scripta Materialia, 37(2): 239-244 (1997). *(June 2012: GS Citations = 18)*

26. **S.M. McDeavitt**, D.P. Abraham**, J.Y. Park, and D.D. Keiser, "Stainless Steel-Zirconium Waste Forms from Electrometallurgical Treatment of Spent Nuclear Fuel," J. Miner. Met. Mater., 49(7): 29-32 (1997). *(June 2012: GS Citations = 10)*

27. J.P Ackerman, L.S. H. Chow, **S.M. McDeavitt**, C. Pereira, and R. H. Woodman "Isolation of Wastes in Electrometallurgical Treatment of Spent Nuclear Fuel," J. Miner. Met. Mater., 49(7): 26-28 (1997). *(June 2012: GS Citations = 4)*

28. D. P. Abraham**, **S. M. McDeavitt**, and J. Y. Park "Microstructure and Phase Identification in Type 304 Stainless Steel-Zirconium Alloys," Metallurgical and Materials Transactions A, 27A: 2151-2159 (1996). *(June 2012: GS Citations = 11)*

29. **S. M. McDeavitt** and A. A. Solomon, "Hot-Isostatic Pressing of U-10Zr by a Coupled Grain Boundary Diffusion and Creep Cavitation Mechanism," Journal of Nuclear Materials, 228: 184-200 (1996). *(June 2012: GS Citations = 3)*
***BEST PAPER** – American Nuclear Society, Materials Science and Technology Division*

30. A.A. Solomon and **S.M. McDeavitt** Preparation of uranium-zirconium alloy nuclear fuel elements by PM," Metal Powder Report, 47(11): 55 (1992).

Journal Articles in process

1. N. Jahangiri, A.G. Raraz, J.E. Indacochea, and **S.M. McDeavitt**, "Assessing Corrosion of UNS S30403 Stainless Steel for Applications in Nuclear Waste Reprocessing Systems," Submitted to J. of Corrosion (NACE) (2012).

2. N. Jahangiri, A.G. Raraz, J.E. Indacochea, and **S.M. McDeavitt**, "Investigation of the Passivation Layer of 304L Stainless Steel During Immersion in a Diluted Nitric Acid Solution," Submitted to Materials and Corrosion (2012).

Shorter communications, briefs, notes or letters in refereed journals.

1. J. Terry, **S.M. McDeavitt**, D. Senor, K.L. Murty, D. Beller, P. Xu, and T. Allen, "2011 Advanced Test Reactor Users Week—Meeting the Needs of the Nuclear Community," Nuclear News 54 (9): 50 (2011).

2. R. J. Hanrahan, C. Boehlert, **S.M. McDeavitt**, "Plutonium: A Reactive Nuclear Metal," J. Miner. Met. Mater., 55(9): 12 (2003).

3. **S.M. McDeavitt**, "Uranium Processing for the Nuclear Fuel Cycle," J. Miner. Met. Mater., 52(9): 11 (2000).

Refereed Conference or Symposium Proceedings.

1. **S.M. McDeavitt**, M.J. Naramore*, J.C. Ragusa, S.T. Revankar, A.A. Solomon and J. Malone, "Evaluation of High Thermal Conductivity Oxide Nuclear Fuel Concept Containing Beryllium," Proceedings of 2010 LWR Fuel Performance/TopFuel/WRFPM, Orlando, Florida, USA, September 26-29, 2010 Paper 138 (2010).
2. N. Jahangiri, A.G. Raraz, J.E. Indacochea and **S.M. McDeavitt**, "UREX+ Centrifugal Contactor Corrosion in HNO_3-HF Aqueous Solutions", NACE International: CORROSION 2010, March 14-18, 2010, San Antonio, TX, Paper No. NACE-10234 (2010).
3. S. Dasari, A.G. Raraz, J.E. Indacochea and **S.M. McDeavitt**, "UREX+ Process: 304L Stainless Steel Centrifugal Contactor Corrosion due to Hydrodynamic Effects", NACE International: CORROSION 2010, March 14-18, 2010, San Antonio, TX, Paper No. NACE-10235 (2010).
4. L.H. Ortega*, M.D. Kaminiski, and **S.M. McDeavitt**, "Sintered clay waste form for immobilization of cesium and strontium liquid waste," Materials Challenges in Alternative & Renewable Energy (Energy 2010), Feb. 21-25, 2010, Cocoa Beach, FL (2010).
5. B. Goddard*, W.S. Charlton, and **S.M. McDeavitt**, "Real-Time Detection of UREX+3a Extraction Streams for Materials Accountancy," 50th Institute of Nuclear Materials Management (INMM) Annual Meeting, July 12-16, 2009, Tucson, AZ (2009).
   Winner: J.D. Williams Student Paper Award, First Place
6. J. Lapinskas, Y. Xu, S. Zielinski, J. A. Webster, R. P. Taleyarkhan and **S.M. McDeavitt**, "Tension Metastable Fluid Detection Systems for Special Nuclear Material Detection and Monitoring," Proceedings of the 17th International Conference on Nuclear Engineering (ICONE-17), Brussels, Belgium, July 12-16, 2009, Paper No. ICONE17-75727, (2009).
   International Paper
7. L.H. Ortega*, M.D. Kaminski, and S.M. McDeavitt, "Immobilization of Liquid Nitrate Waste Containing Cesium and Strontium in Sintered Bentonite Ceramics," Presented at Global 2009: The Nuclear Fuel Cycle: Sustainable Options & Industrial Perspectives, Paris, France, September 6-11, (2009).
   International Paper
8. P.V. Tsvetkov, K. Vierow, K.L. Peddicord, J.C. Ragusa, **S.M. McDeavitt**, J.W. Poston, Sr., L. Shao, and G. Willems, "Autonomous Multi-purpose Floating Power System with a Compact Static Pebble Bed Reactor," PHYSOR '08 – International Conference on the Physics of Reactors, Interlaken, Switzerland, September 14-19 (2008).
   International Paper
9. **S.M. McDeavitt**, A. Parkison*, A.R. Totemeier* and J.J. Wegener* "Fabrication of Cermet Nuclear Fuels Designed for the Transmutation of Transuranic Isotopes," Presented at the 6th Pacific Rim International Conference on Advanced Materials and Processing (PRICM-6), Jeju Island, Korea, November 5-9 (2007). *(August 2010: Web of Science Citations=1)*
   International Paper
10. J. Carter, E. Fu, **S.M. McDeavitt**, X. Zhang, G. Xie and L. Shao, "Characterization of High Strength Alloys Formed by Ion Irradiation of Metallic Glasses," Presented at the 6th Pacific Rim International Conference on Advanced Materials and Processing (PRICM-6), Jeju Island, Korea, November 5-9 (2007).
    International Paper

11. A.R. Totemeier* and **S.M. McDeavitt**, A Zirconium Cermet for Transuranic Isotope Storage and Burning," Presented at Global 2007: Advanced Nuclear Fuel Cycles and Systems, Boise, ID, September 9-13 (2007).
12. L.H. Ortega* and **S.M. McDeavitt**, "Precursors for the Immobilization of Radioactive Cesium and Strontium from Spent Nuclear Fuel," Presented at Global 2007: Advanced Nuclear Fuel Cycles and Systems, Boise, ID, September 9-13 (2007).
13. J.E. Indacochea, **S.M. McDeavitt**, G.W. Billings, "Interfacial Reactions Between Metals and Ceramics at Elevated Temperatures," in Characterization & Control of Interfaces for High Quality Advanced Materials, Volume 146 (eds K. Ewsuk, K. Nogi, M. Reiterer, A. Tomsia, S. J. Glass, R. Waesche, K. Uematsu and M. Naito), John Wiley & Sons, Inc., Hoboken, NJ, USA. (2006). *(June 2012: GS Citations = 5)*
14. **S.M. McDeavitt**, T.J. Downar, and A.A. Solomon, "Cermet Fuels for Advanced Fuel Cycles and Transmutation," Proceeding of the International Congress on Advances in Nuclear Power Plants (ICAPP '05), Seoul, South Korea, May 15-19, Paper No. 5602, pp.1-8 (2005).
International Paper
15. J.E. Indacochea, A. Polar, and **S.M. McDeavitt**, "Challenges in Joining Advanced Ceramic Materials," Proceedings of the International Conference on New Frontiers of Process Science and Engineering in Advanced Materials (PSEA'04), Kyoto, Japan, Nov. 24-26, (2004).
International Paper
16. D.C. Wade, R. Doctor, L. Leibowitz, M.H. Mendelsohn, **S.M. McDeavitt**, J.M. Runge, W.S. Yang, K.L. Peddicord, A.V. Moisseytev, S. Reynaud, G. Tsvetkova, "STAR-H2: A 400 MWTH Lead-Cooled, Long-Refueling Interval Reactor for Hydrogen Production," 11th International Conference on Nuclear Engineering (ICONE-11), Tokyo, Japan, April 20-23, 2003, Paper No. ICONE11-36576, pp.1-10 (2003).
International Paper
17. D.P. Abraham, L. Leibowitz, V.A. Maroni, **S.M. McDeavitt**, and A.G. Raraz, "Corrosion of Structural Materials by Lead-Based Reactor Coolants," IAEA-TECDOC-1356: Emerging nuclear energy and transmutation systems: Core physics and engineering aspects, International Atomic Energy Agency, Vienna, Austria, pp.329-339 (2003).
http://www.iaea.or.at/inis/aws/fnss/abstracts/abst_te_1356_23.html
18. **S.M. McDeavitt**, G.W. Billings, and J.E. Indacochea, "The Role of Interfaces in Ceramic-Metal Bonding," ASM International Materials Solutions 2002, Proceedings of the International Conference on Joining of Advanced and Specialty Materials V, Columbus, OH, Oct. 7-10, 2002.
19. **S.M. McDeavitt**, T.J. Downar, S. Revankar, A.A. Solomon, M.C. Hash, and A.S. Hebden "Thoria-Based Cermet Nuclear Fuel: Cermet Fabrication and Behavior Estimates," Proceedings of the 10th International Conference on Nuclear Engineering (ICONE-10), Arlington, VA, April 14-18, 2002, Paper No. ICONE10-22317, pp.1-9 (2002). *(June 2012: GS Citations = 7)*
20. T.J. Downar, **S. M. McDeavitt**, T.K. Kim, S. Revankar and A.A. Solomon, "Thoria-Based Cermet Nuclear Fuel: Neutronics Fuel Design and Fuel Cycle Analysis," Proceedings of the 10th International Conference on Nuclear Engineering (ICONE-10), Arlington, VA, April 14-18, 2002, Paper No. ICONE10-22305, pp.1-11 (2002). *(June 2012: GS Citations = 3)*
21. A.A. Solomon, **S.M. McDeavitt**, V. Chandramouli, S. Anthonysamy, S. Kuchibhotla, and T. J. Downar, "Thoria-Based Cermet Nuclear Fuel: Sintered Microsphere Fabrication by Spray Drying," Proceedings of the 10th International Conference on Nuclear Engineering (ICONE-10), April 14-18, 2002, Arlington, VA, Paper No. ICONE10-22445, pp.1-8 (2002). *(June 2012: GS Citations = 4)*

22. **S.M. McDeavitt**, G.W. Billings, and J.E. Indacochea, "Ceramic-Metal Interface Stability," ASM International Materials Solutions 2001, Proceedings of the International Conference on Joining of Advanced and Specialty Materials IV, Indianapolis, IN, November 5-8, 2001, pp.79-87 (2001).

23. **S.M. McDeavitt**, G.W. Billings, and J.E. Indacochea, "Fundamental Studies of Ceramic/Metal Interfacial Reactions at Elevated Temperatures," Brazing, High temperature Brazing and Diffusion Welding, ed. E. Lugscheider, Lectures and Posters of the 6th International Conference Löt 2001, Aachen, Germany, May 8-10, 2001, German Welding Soc., Dusseldorf, Germany, 212:189-194 (2001). *(June 2012: GS Citations = 2)*
Invited International Paper

24. **S.M. McDeavitt**, G.W. Billings, and J.E. Indacochea, "Interaction Phenomena at Reactive Metal/Ceramic Interfaces," ASM International Materials Solutions 2000, Proceedings of the International Conference on Joining of Advanced and Specialty Materials III, eds. M. Singh, J. E. Indacochea, J. N. DuPong, and T. J. Lienert, St. Louis, MO, October 9-12, 2000, pp.36-42 (2001).

25. R.W. Benedict, S.G. Johnson, D.D. Keiser, T.P.O'Holleran, K.M. Goff, S.M. McDeavitt, and W. Ebert, "Waste Forms from the Electrometallurgical Treatment of DOE Spent Fuel: Production and General Characteristics," AIP Conf. Proc. 532, 86 (2000). *(June 2012: GS Citations = 2)*

26. **S.M. McDeavitt**, G.W. Billings, and J.E. Indacochea, "Reactive Wetting in High Temperature Metal/Ceramic Oxide Systems," ASM International Materials Solutions 2000, Proceedings of the Heat Treating Society, St. Louis, MO, October 9-12, 2000 (2000).

27. D.D. Keiser, W. Sinkler, D.P. Abraham, J.W. Richardson, and **S.M. McDeavitt**, "The Effects of Actinides on the Microstructural Development in a Metallic High-Level Nuclear Waste Form," Rare Earths and Actinides: Science, Technology, and Applications IV, eds. R.G. Bautista and B. Mishra, Proc. from the 129th Annual Meeting of Min., Met., and Mater. Soc. (TMS), Nashville, TN, March 12-16, 2000, pp.111-121 (2000). *(May 2011: Web of Science Citations=1)*

28. **S.M. McDeavitt**, "Synthesis and Casting of a Lithium-Bismuth Compound for an Ion-Replacement Electrorefiner," Light Metals 1999, Proc. from the 128th Annual Meeting of the Minerals, Metals, and Materials Soc. (TMS), San Diego, CA, February 15–19, 1999, pp.1139-1142 (1999).

29. D.P. Abraham, D.D. Keiser, and **S.M. McDeavitt**, "Metal Waste Forms from Treatment of EBR-II Spent Fuel," Proc. of the Int. Conf. on Decommissioning and Decontamination and on Nuclear and Hazardous Waste Management, Spectrum '98, Denver, CO, September 13-18, 1998, Vol. 2, p.783 (1998).

30. J.P. Ackerman, **S.M. McDeavitt**, C. Pereira, and L.J. Simpson, "Waste Form Development and Characterization in Pyrometallurgical Treatment of Spent Nuclear Fuel," Third Topical Meeting on DOE Spent Nuclear Fuel and Fissile Materials Management, Am. Nucl. Soc., Charleston, SC, September 8-11, (1998).

31. D.D. Keiser, Jr. and **S.M. McDeavitt**, "Phase Development in As-Cast Zirconium-Based Alloys Containing Type 304 Stainless Steel and Pu," Light Metals 1998, Ed. B.J. Welch, Proc. From the 127th Annual Meeting of the Min., Met., and Mater. Soc. (TMS), San Antonio, TX, Feb. 15-19, 1998, pp.1373-1378 (1998).

32. **S.M. McDeavitt** and G.W. Billings, "The Development of Stable Ceramic Materials for the Containment of Molten Zirconium and Uranium Alloys," Light Metals 1998, Ed. B.J. Welch, Proc. From the 127th Annual Meeting of the Min., Met., and Mater. Soc. (TMS), San Antonio, TX, Feb. 15-19, 1998, p.1365 (1998).

33. **S.M. McDeavitt**, D.P. Abraham**, D.D. Keiser, and J.Y. Park, "Alloy Waste Forms for Metal Fission Products and Actinides Isolated by Spent Nuclear Fuel Treatment," Proc. of the Second Int. Symposium on Extraction and Processing for the Treatment and Minimization of Wastes, Scottsdale, AZ, Oct. 27-30, 1996, pp.177-189 (1996). *(June 2012: GS Citations = 2)*

34. **S.M. McDeavitt**, D.P. Abraham**, D.D. Keiser, and J.Y. Park, "Stainless Steel-Zirconium Alloy Waste Forms for Metallic Fission Products and Actinides Isolated During Treatment of Spent Nuclear Fuel," Proc. of the Spectrum '96 Meeting, Nuclear and Hazardous Waste Management Int. Topical Meeting, Am. Nucl. Soc., Seattle, WA, Aug. 18-23, 1996, pp.2477-2484 (1996).

35. D.P. Abraham**, **S.M. McDeavitt**, and J. Y. Park, "Metal Waste Forms from the Electrometallurgical Treatment of Spent Nuclear Fuel," Proc. of the Embedded Topical Meeting on DOE Spent Nuclear Fuel and Fissile Material Management, Am. Nucl. Soc., Reno, NV, June 16-20, 1996, pp.123-128 (1996). *(June 2012: GS Citations = 8)*

36. D.D. Keiser and **S.M. McDeavitt**, "Actinide-Containing Metal Disposition Alloys," Proc. of the Embedded Topical Meeting on DOE Spent Nuclear Fuel and Fissile Material Management, Am. Nucl. Soc., Reno, NV, June 16-20, 1996, pp.178-182 (1996). *(June 2012: GS Citations = 4)*

37. **S.M. McDeavitt**, J.Y. Park, and J.P. Ackerman, "Defining a Metal-Based Waste Form for IFR Pyroprocessing," in *Actinide Processing: Methods and Materials*, Eds. B. Mishra and W. A. Averill, Proc. of the Int. Symposium Held at the 123rd Annual Meeting of the Min., Met., and Mater. Soc. (TMS), San Francisco, CA, Feb. 28-Mar. 3, 1994, pp.305-319 (1994). *(June 2012: GS Citations = 6)*

38. **S.M. McDeavitt** and A.A. Solomon, "Preparation and Performance of U-10Zr Alloy Nuclear Fuel Using Powder Metallurgy Techniques," in *Advances in Powder Metallurgy & Particulate Materials - 1992, Vol. 6, Non-Ferrous Materials*, Eds. J. M. Capus and R. M. German, Proc. of the World Congress of Powder Metallurgy Workshop, San Francisco, CA, June 1992, pp.109-123 (1992). *(June 2012: GS Citations = 3)*

Refereed conference summaries or abstracts.

1. S. Ahn* and **S.M. McDeavitt**, Transformation Enthalpies of Uranium-Zirconium Alloy System," Proc. of the Am. Nucl. Soc. Annual Meeting, Chicago, IL., June 24–28, 2012, ANS Transactions, xxx:yyy (2012).

2. S. Ahn* and **S.M. McDeavitt**, "Thermophysical Investigation of Uranium-Zirconium Alloy Phase Diagram," Presented at the Korean Nuclear Society Spring Meeting, Jeju, Korea, May 17-18, 2012 (2012).
   International Paper

3. A.J. Parkison* and **S.M. McDeavitt**, "Hydride Formation Process Development for the Powder Metallurgical Recycle of Zircaloy, Proc. of the Am. Nucl. Soc. Winter Meeting, Washington, DC, Oct. 30-Nov. 3, 2011, ANS Transactions, xxx:yyy (2011).

4. P. Tsvetkov, S. Chirayath. J.C. Ragusa**, S.M. McDeavitt**, C. Gariazzo, J. Johns, A. Al Rashdan, V. Patel, A. Jati, and Gary E. Rochau, High Temperature Super-Critical CO_2-Cooled Integrated Multi-Modular Thermal Reactor, Proc. of the Am. Nucl. Soc. Winter Meeting, Washington, DC, Oct. 30-Nov. 3, 2011, ANS Transactions, xxx:yyy (2011).

5. **S.M. McDeavitt**, M.J. Naramore*, R. Miller*, J.C. Ragusa, S.T. Revankar, A.A. Solomon and J. Malone, "Introducing a High Thermal Conductivity UO_2-BeO Nuclear Fuel Concept," Proc. of the Am. Nucl. Soc. Winter Meeting, Las Vegas, NV., Nov. 7–11, 2010, ANS Transactions, 103:273 (2010).
   2010 ANS-MSTD Significant Contribution Award

6. J.C. Ragusa, **S.M. McDeavitt**, M.J. Naramore*, "Neutronic Evaluation of High Thermal Conductivity UO_2-BeO Fuel" Proc. of the Am. Nucl. Soc. Winter Meeting, Las Vegas, NV., Nov. 7–11, 2010, ANS Transactions, 103:761 (2010).
7. A.J. Parkison* and **S.M. McDeavitt**, "Potential Zircaloy Recycle Method via Hydride Formation" Proc. of the Am. Nucl. Soc. Winter Meeting, Las Vegas, NV., Nov. 7–11, 2010, ANS Transactions, 103:243 (2010).
8. G.W. Helmreich*, D.J. Garnetti* and **S.M. McDeavitt**, "Sintering α-phase Uranium and its Alloys" Proc. of the Am. Nucl. Soc. Winter Meeting, Las Vegas, NV., Nov. 7–11, 2010, ANS Transactions, 103:296 (2010).
9. J.S. Hausaman*, D.J. Garnetti* and **S.M. McDeavitt**, "Powder Metallurgy of Alpha Phase Uranium Alloys for TRU burning Fast Reactors" Proc. of the Am. Nucl. Soc. Winter Meeting, Las Vegas, NV., Nov. 7–11, 2010, ANS Transactions, 103:294 (2010).
10. J.T. Creasy* and **S.M. McDeavitt**, "Thermal Properties of Uranium Molybdenum Alloys at Various Stages of Phase Decomposition" Proc. of the Am. Nucl. Soc. Winter Meeting, Las Vegas, NV., Nov. 7–11, 2010, ANS Transactions, 103:291 (2010).
11. B. Goddard*, W.S. Charlton and **S.M. McDeavitt**, "Real-Time Detection of UREX+3a Extraction Streams for Process Monitoring Applications," 2009 Annual Meeting of the American Nuclear Society, Atlanta, GA, June 14-18, 2009.
12. K.A. Mews* and **S.M. McDeavitt**, "Sample Preparation of U-Zr Fuel Alloys for TEM Analysis," 2009 Annual Meeting of the American Nuclear Society, Atlanta, GA, June 14-18, 2009.
13. K. Vierow, F. Best, J. Ford, Y. Hassan, **S.M. McDeavitt**, J. Ragusa, W. D. Reece, L. Shao, P. Tsvetkov, "TAMU Nuclear Safety Curriculum Development for a 21st Century Workforce," 2008 Annual Meeting of the American Nuclear Society, Anaheim, CA, June 8-12, 2008.
14. P.A. Mews* and **S.M. McDeavitt**, "Evaluation of Zirconium-Iron-Rhenium Alloy Surrogates for a Technetium Alloy Waste Form," Proc. Of the Am. Nucl. Soc. Winter Meeting, Washington D.C., Nov. 11-15, 2007, ANS Transactions, 97:79 (2007).
15. **S.M. McDeavitt**, D.T. Kraemer*, A. Parkison*, A.R. Totemeier* and J.J. Wegener*, "Zirconium Matrix Cermet Storage Form and Transmutation Fuel for Transuranics," Proc. of the Am. Nucl. Soc. Winter Meeting, Washington D.C., Nov. 13–17, 2005, ANS Transactions, 93:743 (2005). *(June 2012: GS Citations = 1)*
16. R.S. Fielding M.K. Meyer R. Prabhakaran, J.H. Miller and **S.M. McDeavitt**, "Gas Fast Reactor Fuel Development," Proc. of the Am. Nucl. Soc. Winter Meeting, Washington D.C., Nov. 13–17, 2005, ANS Transactions, 93:775 (2005).
17. A. Totemeier*, T. Jevremovic, and **S.M. McDeavitt**, "Shielding Requirements for Mission to Mars Nuclear Engines," Proc. of the Am. Nucl. Soc. Annual Meeting, Pittsburgh, PA, June 13-17, 2004, ANS Transactions, 90:517 (2004).
18. **S.M. McDeavitt**, T.J. Downar, and A.A. Solomon, "Cermet Fuel for the Thorium Fuel Cycle," Proc. of the Am. Nucl. Soc. Annual Meeting, Hollywood, FL, June 9-13, 2002, ANS Transactions, 86: 276 (2002).
    2002 ANS-MSTD Significant Contribution Award
19. **S.M. McDeavitt**, "Ceramic-Metal Interfaces in Nuclear Materials Application," Proc. of the Am. Nucl. Soc. Annual Meeting, Hollywood, CA, June 9-13, 2002, ANS Transactions, 86: 295 (2002).

20. L. Leibowitz, V.A. Maroni, **S.M. McDeavitt**, A.G. Raraz, A.J. Kropf, "Corrosion of Stainless Steels by Lead-Based Reactor Coolants," Proc. of the Am. Nucl. Soc. Winter Meeting, Reno, NV, November 11–15, 2001, ANS Transactions, 85: 298 (2001).
21. **S.M. McDeavitt**, T.J. Downar, M.C. Hash, S.Revankar, A.A. Solomon, Y. Xu, A. S. Hebden, W. Robey, and J. Xiu, "Development of a Mixed-Oxide Cermet Dispersion Fuel Using (Th,U)O_2 in a Zirconium Metal Matrix," Proc. of the Am. Nucl. Soc. Winter Meeting, Washington, DC, November 12-16, 2000, ANS Transactions, 83: 205 (2000).
22. **S.M. McDeavitt**, J.L. Smith, C.C. McPheeters, R.D. Pierce, and D.S. Poa, "Electrode Materials for the Reduction of CaO and Li_2O for Actinide Pyroprocessing," in *Actinide Processing: Methods and Materials*, Eds. B. Mishra and W. A. Averill, Proc. of the Int. Symposium Held at the 123rd Annual Meeting of the Min., Met., and Mater. Soc. (TMS), San Francisco, CA, Feb. 28-Mar. 3, 1994, p.215 (1994).
23. **S.M. McDeavitt** and A.A. Solomon, "Hot Isostatic Pressing of Porous U-10Zr Prepared by Powder Metallurgy Techniques," Proc. of the Am. Nucl. Soc. Winter Meeting, Chicago, IL, Nov. 1992, ANS Transactions, 66: 189 (1992).

Papers presented at professional meetings.

1. C.J. Humrickhouse-Helmreich* and **S.M. McDeavitt**, "Measured Thermal Diffusivity of Depleted Uranium Metal Microspheres," *Submitted to* NuMat 2012: the Nuclear Materials Conference, October 21-25, 2012 Osaka, Japan (2012).
2. C.J. Humrickhouse-Helmreich*, J. Walter, and **S.M. McDeavitt**, "Reactivity of Melt Refined Metal Fuel from the Travelling Wave Reactor," *Submitted to* NuMat 2012: the Nuclear Materials Conference, October 21-25, 2012 Osaka, Japan (2012).
3. G.A. Helmreich* and **S.M. McDeavitt**, "Diffusion Couples Studies," *Submitted to* NuMat 2012: the Nuclear Materials Conference, October 21-25, 2012 Osaka, Japan (2012).
4. S. Irukuvarghula*, S. Ahn*, and **S.M. McDeavitt**, "Metallurgical Characterization of the Delta Phase Formation in Uranium-Zirconium Alloy Fuels," Presented at the 141st Annual Meeting of the Min., Met., and Mater. Soc. (TMS), Orlando, FL, Mar. 11-14, 2012.
5. S. Ahn*, S. Irukuvarghula*, and **S.M. McDeavitt**, "Thermodynamic Assessment of the Uranium-Zirconium Alloy System for Nuclear Energy Applications," Presented at the 141st Annual Meeting of the Min., Met., and Mater. Soc. (TMS), Orlando, FL, Mar. 11-14, 2012.
6. **S.M. McDeavitt,** "Fuel Aging in Storage and Transportation (FAST): Accelerated Characterization and Performance Assessment of the Used Nuclear Fuel Storage System," Presented at the Extended Storage Collaboration Project (ESCP) meeting, Electric Power Research Institute, St. Petersburg, FL, May 7, 2012.
7. **S.M. McDeavitt,** "Fuel Aging in Storage and Transportation (FAST): Accelerated Characterization and Performance Assessment of the Used Nuclear Fuel Storage System," Presented to the U.S. Department of Energy, Nuclear Energy Advisory Council, Fuel Cycle Research and Development Subcommittee, Washington, DC, Feb. 7, 2012.
8. **S.M. McDeavitt,** "Fuel Aging in Storage and Transportation (FAST): Accelerated Characterization and Performance Assessment of the Used Nuclear Fuel Storage System," Presented at the U.S. Department of Energy, 2011 Cladding Test Plan Workshop, Las Vegas, NV, Nov. 17, 2011.

9. **S.M. McDeavitt,** "Fuel Aging in Storage and Transportation (FAST): Accelerated Characterization and Performance Assessment of the Used Nuclear Fuel Storage System," Presented at the U.S. Department of Energy, 2011 Fuel Cycle Technology Annual Review Meeting, Argonne, IL, Nov. 8, 2011.
10. J. Hausaman*, G. Helmreich*, W.J. Sames* and **S.M. McDeavitt**, "Powder Metallurgy of Uranium Alloys for TRU Burning Fast Reactors," 2010 American Nuclear Society National Student Conference, Ann Arbor, MI, April 8-11, 2010.
11. W.J. Sames*, G. Helmreich*, J. Hausaman* and **S.M. McDeavitt**, "Uranium Powder Production and Characterization from a Hydride-Dehydride Process," 2010 American Nuclear Society National Student Conference, Ann Arbor, MI, April 8-11, 2010.
12. B. Goddard*, W.S. Charlton, and **S.M. McDeavitt**, "Real-Time Detection of UREX+3a Extraction Streams for Process Monitoring Applications," 2009 American Nuclear Society National Student Conference, Gainesville, FL, April 1-5, 2009.
13. N.M. Lynn*, M. Naramore*, L.H. Ortega* and **S.M. McDeavitt**, "Thermal Modeling of Cylindrical Objects for Efficiency Evaluation," 2009 American Nuclear Society National Student Conference, Gainesville, FL, April 1-5, 2009.
14. B. Goddard*, W.S. Charlton, and **S.M. McDeavitt**, "Real-Time Detection of UREX+3a Extraction Streams for Process Monitoring Applications," 12th Annual Student Research Week, Texas A&M University, College Station, TX, March 23-27, 2009.
15. **S.M. McDeavitt**, "A Nuclear Engineer without Materials Science is like an Aggie without a Whoop," 2008 American Nuclear Society National Student Conference, College Station, TX, Apr. 28 – May 1, 2008.
    Session Keynote Lecture
16. B. Goddard* and **S.M. McDeavitt**, "Real-time Detection Methods to Monitor TRU Compositions in UREX+ Process Streams," 2008 American Nuclear Society National Student Conference, College Station, TX, Apr. 28 – May 1, 2008.
17. M.Z. Adams*, L.H. Ortega* and **S.M. McDeavitt**, "Precursors for the immobilization of Radioactive Cesium and Strontium from Spent Nuclear Fuel," 2008 American Nuclear Society National Student Conference, College Station, TX, Apr. 28 – May 1, 2008.
18. J. Hausaman* and **S.M. McDeavitt**, "Methods for Controlling Corrosion in Lead-Cooled Reactors," 2008 American Nuclear Society National Student Conference, College Station, TX, Apr. 28 – May 1, 2008.
19. P.A. Mews* and **S.M. McDeavitt**, "Effects of Re Loading on Corrosion Resistance in a Zr-Fe Alloy Waste Form," 2008 American Nuclear Society National Student Conference, College Station, TX, Apr. 28 – May 1, 2008.
20. B. Goddard* and **S.M. McDeavitt**, "Real-Time Detection Methods to Monitor TRU Compositions in UREX+ Process Streams," 11th Annual Student Research Week, College Station, TX, March 24-28, 2008
21. **S.M. McDeavitt**, A.R. Totemeier*, A. Parkison*, J.J. Wegener* and R.D. Kelley*, "A Zirconium Matrix Cermet for Storage and Transmutation of Transuranic Isotopes Separated from Spent Nuclear Fuel," 136th TMS Annual Meeting & Exhibition, Symposium on Materials Issues for Advanced Nuclear Systems, Orlando, FL, Feb. 25-Mar. 1, 2007.

22. A.C. Slaga* and **S.M. McDeavitt**, "Chemical Vapor Deposition of SiC onto Ceramic Microspheres Using a Fluidized Bed," American Nuclear Society Student Conference, Troy, NY, Mar. 30 – Apr. 1, 2006.
23. P.A. Mews*, A.C. Slaga* and **S.M. McDeavitt**, "Analysis of Silicon Carbide Coatings on Surrogate GFR Fuel Microspheres," American Nuclear Society Student Conference, Troy, NY, Mar. 30 – Apr. 1, 2006.
24. A.J. Parkison* and **S.M. McDeavitt**, "Hydride/Dehydride of Zircaloy for Use in Fast Reactors," American Nuclear Society Student Conference, Troy, NY, Mar. 30 - April 1, 2006.
25. A.R. Totemeier* and **S.M. McDeavitt**, "Waste Management Symposium," panel presentation at the 2006 Waste Management Symposium (WM'06), Tucson, AZ, Feb. 26-Mar. 02.
    A.R.Totemeier - Roy G. Post Foundation Scholarship Award
26. **S.M. McDeavitt** and A. Slaga*, "Development of Small-Scale Coating Methods for the Porous SiC Buffer on GFR Fuel Kernels," U.S. Department of Energy International Nuclear Energy Research Initiative Semi-Annual Gas Fast Reactor Fuels Review Meeting, Idaho Falls, ID, Dec. 14-16, 2005.
27. **S.M. McDeavitt**, "Am/Cm Storage Form," U.S. Department of Energy Advanced Fuel Cycle Initiative Semi-Annual Meeting, Arlington, VA, Sept. 21-23, 2005.
28. Paul A. Mews*, Eric C. Howell* and **S.M. McDeavitt**, "Tungsten-Uranium Oxide Cermets for Nuclear Rocket Applications," American Nuclear Society Student Conference, Columbus, OH, Apr. 15, 2005.
29. J.E. Indacochea and **S.M. McDeavitt**, "Interface Reactions Between Reactive Liquid Metals and Ceramics at High Temperatures," 106th Annual Meeting & Exposition of the American Ceramic Society, Indianapolis, IN, Apr. 18-21, 2004.
30. **S.M. McDeavitt**, J.E. Indacochea, and G.W. Billings, "Interfacial Reactions Between Metals and Ceramics at Elevated Temperatures," International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials," Kurashiki, Japan, Sept. 24-27, 2003.
    International Paper
31. R.J. Finch, W.E. Miller, **S.M. McDeavitt**, J.M. Rungs, L. Leibowitz, and M.A. Williamson, "Decomposition Voltages of Metal Chlorides for the Separation of U and Pu from Lanthanide Fission Products in Molten Salt," 27th Actinide Separations Conference, Argonne, IL, Jun. 9-12, 2003.
32. **S.M. McDeavitt**, J.M. Runge, L. Leibowitz, J.E. Indacochea, and L.A. Barnes, "Liquid Metal Interactions on Ceramic Surfaces in Advanced Nuclear Energy Applications," 11th International Conference on Nuclear Engineering (ICONE-11), Tokyo, Japan, Apr. 20-23, 2003, Paper No. ICONE11-36552 (2003).
33. C. T. Snyder, J. M. Runge, T. C. Carter, A. S. Hebden, B. Campbell*, and **S. M. McDeavitt**, "Precursor Selection for Chemical Vapor Deposition of Niobium on Zirconia Microspheres," 132nd TMS Annual Meeting, Symposium on Actinide Materials: Processing Characterization, and Behavior, San Diego, CA, Mar. 2–6, 2003.
34. **S. M. McDeavitt**, M.C. Hash, A.S. Hebden, J.M. Runge, C.T.Snyder and A.A. Solomon, "Cermet Nuclear Fuel Fabrication by Powder Metallurgy Methods," 132nd TMS Annual Meeting, Symposium on Actinide Materials: Processing Characterization, and Behavior San Diego, CA, Mar. 2–6, 2003.

35. **S.M. McDeavitt**, J.E. Indacochea, and G.W. Billings, "Interfacial Aspects of Ceramic-Metal Brazing," AWS-ASM Int. IBSC Brazing and Soldering Conf., San Diego, CA, Feb. 17–19, 2003.

36. **S.M. McDeavitt,** M.C. Hash, T.J. Downar, A.A. Solomon, A.S. Hebden, J.M. Runge, C.T. Snyder, and L. A. Barnes, "Low-Temperature Powder Metallurgy Method for the Fabrication of Cermet Inert Matrix Fuels," Inert Matrix Fuel Workshop - 8th Meeting**,** JAERI Tokai, Ibaraki, Japan, Oct. 16-18**,** 2002.
International Paper

37. **S.M. McDeavitt**, J.E. Indacochea, and G.W. Billings, "The Role of Ceramic-Metal Interfaces as an Enabling Technology in Nuclear Energy Applications," Presented at the 104th Annual Meeting of the Am. Ceram. Soc. Int. Symp. on Ceramic Joining, St. Louis, MO, Apr. 29–May 2, 2002.
Invited Paper

38. **S.M. McDeavitt**, L. Leibowitz, V.A. Maroni, J.M. Runge, L.A. Barnes, and C.T. Snyder, "Corrosion of HT9 Stainless Steel by Lead-Based Reactor Coolants" Presented at the American Nuclear Society Winter Meeting, Reno, NV, Nov. 11–15, 2001.

39. **S.M. McDeavitt**, "Corrosion Testing of Structural Steels in Lead-Based Coolants in Support of ANL Advanced Reactor Concepts," Presented at the Lead-Bismuth Technology Int. Meeting, O-arai Engineering Center, Japan Nuclear Cycle Development Institute, Mito, Japan, Dec. 12-15, 2000.
Invited International Paper

40. D.P. Abraham, L. Leibowitz, V.A. Maroni, **S.M. McDeavitt**, and A.G. Raraz, "Corrosion of Structural Materials by Lead-Based Reactor Coolants," Presented at the International Atomic Energy Agency Technical Committee Meeting on Core Physics and Engineering Aspects of Emerging Nuclear Energy Systems for Energy Generation and Transmutation, Argonne National Laboratory, Argonne, IL, Nov. 28–Dec. 1, 2000.

41. **S.M. McDeavitt**, G.W. Billings, and J.E. Indacochea, "Reactive Wetting in Refractory Metal/Ceramic Oxide Systems," Presented at the Fall Meeting of the Minerals, Metals, and Materials Society (TMS), St. Louis, MO, Oct. 8-12, 2000.

42. **S.M. McDeavitt**, K.M. Goff, D.P. Abraham, W.L. Ebert, M.C. Hash, S.G. Johnson, D.D. Keiser, D. Lexa, T.P. O'Holleran, M.K. Richmann, M.F. Simpson, and B.R. Westphal, "The Development, Processing and Qualification of Ceramic and Metal Waste Forms from the Electrometallurgical Treatment of Spent Nuclear Fuel," Presented at the Fall Meeting of the Min., Met., and Mater. Soc. (TMS), St. Louis, MO, Oct. 8-12, 2000.

43. J.J. Laidler, **S.M. McDeavitt**, M.A. Williamson, J.L. Willit, D.P. Abraham, and K.V. Gourishankar, "Developing Separations Technologies and Waste Forms for the Accelerator Transmutation of Waste (ATW)," Presented at the Fall Meeting of the Min., Met., and Mater. Soc. (TMS), St. Louis, MO, Oct. 8-12, 2000.

44. D.P. Abraham, J.W. Richardson, and **S.M. McDeavitt**, "Microstructure of the Zirconium-8 wt% Stainless Steel Alloy," Presented at the Metallurgical Soc. Annual Meeting, San Diego, CA, Feb. 28–Mar. 4, 1999.

45. D.P. Abraham and **S.M. McDeavitt**, "Influence of Zirconium Content on Fission Product Distributions in Stainless Steel Zirconium Waste Forms," Presented at the Symposium on Hazardous and Radioactive Waste, Am. Chem. Soc., Dallas, TX, Mar. 29-Apr. 2, 1998.

46. **S.M. McDeavitt** and G.W. Billings, "The Development of Stable Ceramic Materials for the Containment of Molten Zirconium and Uranium Alloys," Presented at the 127th Annual Meeting of the Min., Met., and Mater. Soc. (TMS), San Antonio, TX, Feb. 15-19, 1998.

47. D.P. Abraham**, **S.M. McDeavitt**, and J.W. Richardson, "Laves Intermetallics in Stainless Steel-Zirconium Alloys," Presented at the Fourth Int. Conf. on High-Temperature Intermetallics, San Diego, CA, Apr. 27-May 1, 1997.
48. **S.M. McDeavitt** and D.P. Abraham**, "Development of Processing Methods for Stainless Steel-Zirconium Nuclear Waste Form Alloys," Presented at the 126th Annual Meeting of the Min., Met., and Mater. Soc. (TMS), Orlando, FL, Feb. 9-13, 1997.
49. **S.M. McDeavitt** and D.P. Abraham**, "Metal Waste Alloys from Spent Fuel Treatment: Metallurgy and Processing," Presented at the 16th Annual Pyrochemical Workshop, St. Charles, IL, Oct. 31, 1996.
50. **S.M. McDeavitt**, "Metal Waste Forms for Fission Products and Actinides from the Electrometallurgical Treatment of Spent Nuclear Fuel," Presented at the 20th Annual Actinide Separations Conference, Itasca, IL, Jun. 11-13, 1996.
51. **S.M. McDeavitt** and G.W. Billings, "High-Temperature Interaction Studies to Screen Melt Crucible Materials for Stainless Steel-Zirconium Alloys and Uranium," Presented at the 125th Annual Meeting of the Min., Met., and Mater. Soc. (TMS), Anaheim, CA, Feb. 4-8, 1996.
52. D.P. Abraham** and **S.M. McDeavitt**, "Investigation of Material and Processing Parameters in the Development of the Metal Waste Form," Presented at the Fall Meeting of the Min., Met., and Mater. Soc. (TMS), Cleveland, OH, Oct. 29-Nov. 2, 1995.
53. **S.M. McDeavitt**, D.P. Abraham**, and J.Y. Park, "Alloy Waste Forms for the Disposal of Low TRU Metal Wastes from Spent Nuclear Fuel," Presented at the Fall Meeting of the Min., Met., and Mater. Soc. (TMS), Cleveland, OH, Oct. 29-Nov. 2, 1995.
54. **S.M. McDeavitt**, T.R. Johnson, R.P. Jacqmin, R.N Hill, and D.D. Keiser, "A Zirconium Metal Alloy for the Immobilization of Surplus Fissile Materials," Presented at the 19th Annual Actinide Separations Conference, Monterey, CA, June 12-15, 1995.
55. **S.M. McDeavitt**, D.P. Abraham**, J.Y. Park, and J.P. Ackerman "Materials Development for Pyroprocesses: Metal Waste Forms and Molten Metal Containment," Presented at the 14th Annual Pyrochemical Workshop, Boulder, CO, Oct. 31-Nov. 3, 1994.
56. D.S. Poa, J.L. Smith, **S.M. McDeavitt**, and R.D. Pierce, "Electrochemical Recovery of Spent Reduction Salt," Presented at the 14th Annual Pyrochemical Workshop, Boulder, CO, Oct. 31-Nov. 3, 1994.
57. P.S. Maiya, B.M. Moon, **S.M. McDeavitt**, D.E. Busch, and R.B. Poeppel, "Adhesion and Corrosion of Graphite Coatings in Pyrochemical Environments," Presented at the 96th Am. Ceram. Soc. Meeting, Indianapolis, IN, Apr. 24-28, 1994.
58. P.S. Maiya and **S.M. McDeavitt,** "Container Materials Development for Actinide Recycling Processes," Presented at the 13th Annual Pyrochemical Workshop, Albuquerque, NM, Oct. 18-21, 1993.
59. A.A. Solomon and **S.M. McDeavitt**, "Preparation of uranium-zirconium alloy nuclear fuel elements by PM," Metal Powder Report, 47:11 (Nov 1992) 55.
60. **S.M. McDeavitt** and A.A. Solomon, "Preparation of U-10Zr Alloy Nuclear Fuel Using Powder Metallurgy Techniques," Presented at the 94th Am. Ceram. Soc. Meeting, Minneapolis, MN, April 1992.
61. **S.M. McDeavitt** and A.A. Solomon, "Hot-Pressing of U-10Zr Alloy Nuclear Fuel," Presented at the 94th Am. Ceram. Soc. Meeting, Minneapolis, MN, Apr. 1992.

Government, university, or industrial reports (public documents only)

1. **S.M. McDeavitt**, T.J. Downar, A.A. Solomon, S. Revankar, T.K. Kim, Y. Xu, V. Chandramouli, S. Anthonysamy, S. Kuchibhotla, M. C. Hash, A.S. Hebden, L.E. Putty "Cermet Fuel Development for Advanced Nuclear Systems – $(Th,U)O_2$ in a Metal Matrix," Purdue University Technical Report PU/NE 05-04-FCML/1 (2005).
2. J.J. Laidler, E.D. Collins, J. Duguid, R.N. Henry, E.J. Karell, **S.M. McDeavitt**, M. Thompson, L.M. Toth, M.A. Williamson and J.L. Willit, "Preparation of a Technology Development Roadmap for the Accelerator Transmutation of Waste (ATW) System: Report of the ATW Separations Technologies and Waste Forms Technical Working Group," ANL-99/15 (1999).
3. R.W. Benedict, et. al (19 authors), "Spent Fuel Treatment Demonstration Final Report," ANL-NT-106 (1999).
4. B.R. Westphal, et. al (8 authors), "Metal Waste Form Process Qualification Plan," ANL-NT-120 (1999).
5. D.P. Abraham, et. al (12 authors), "Metal Waste Form Handbook," ANL-NT-121 (1999).

Short-Course Lectures

1. **S.M. McDeavitt**, "Nuclear Materials Engineering: Materials Science for Nuclear Energy Applications," Invited guest lecturer at *Nuclear Power Engineering 2007* at the Indian Institute of Technology, Kanpur, India, July 13, 2007.
   Invited International Lecture
2. **S.M. McDeavitt**, "Nuclear Materials Engineering: Interactions of Materials with Radiation," Invited guest lecturer at *Nuclear Power Engineering 2007* at the Indian Institute of Technology, Kanpur, India, July 13, 2007.
   Invited International Lecture
3. **S.M. McDeavitt**, "Fast Reactor Fuel," Innovations in Nuclear infrastructure and Education (INIE) Big Ten Summer School, hosted at Argonne National Laboratory, Argonne, IL, July 25, 2006.
   Invited Lecture

Invited Panel Presentations

1. **S.M. McDeavitt** (part of panel), "Extended Storage and Transportation of Spent Nuclear Fuel-I," Panel Discussion at the 2012 American Nuclear Society Annual Meeting, Chicago, IL, June 24-28, 2012.
2. **S.M. McDeavitt**, "Nuclear Energy in the US and at Texas A&M University," Mini-Symposium on Civilian Nuclear Power, closing program for Nuclear Power Engineering 2007 at the Indian Institute of Technology, Kanpur, India, July 13, 2007.

   Invited International Paper
3. **S.M. McDeavitt**, "Comments on High Temperature Lead Coolants," Topic: Lead/Lead Alloy Application Technology in the Nuclear Field: Closing Plenary, 11th International Conference on Nuclear Engineering (ICONE-11), Tokyo, Japan, April 20-23, 2003. *Other panelists: N. Li (LANL), E. Loewen (INEEL), G. Mueller (FZK), K. Aoto (JNC), and V.V. Orlov (FSUE RDIPE).*

Seminars

1. **S. M. McDeavitt,** "Materials Challenges Limit Nuclear Fuel Performance Before, During, and After Service," Department of Nuclear Engineering, Texas A&M University, College Station, TX, August 29, 2011.
2. **S. M. McDeavitt,** "Powder Metallurgy of Uranium Alloy Fuels for Advanced Nuclear Energy Systems," Materials Science and Engineering Graduate Seminar (MSEN 681), Texas A&M University, College Station, TX, October 30, 2009.
3. **S. M. McDeavitt,** "Back Row Debate: The U.S. Should Reprocess all of its Used Nuclear Fuel," Department of Nuclear Engineering, Texas A&M University, College Station, TX, April 11, 2008.
4. **S. M. McDeavitt,** "Materials Solutions for Advanced Nuclear Energy Systems," Student Chapter of ASM Material Advantage, Texas A&M University, College Station, TX, March 20, 2008.
5. **S. M. McDeavitt,** "Research Activities in the TAMU Fuel Cycle and Materials Laboratory," Department of Nuclear Engineering, Texas A&M University, College Station, TX, September 25, 2007.
6. **S. M. McDeavitt**, "Zirconium Matrix Cermet Nuclear Fuels ," Presented at the Indira Ghandi Center for Atomic Research, Kalpakkam, India, July 16, 2007.
   Invited International Seminar
7. **S. M. McDeavitt,** "Nuclear Materials Engineering," Department of Nuclear Engineering, Texas A&M University, College Station, TX, September 5, 2006.
8. **S. M. McDeavitt,** "Nuclear Materials Engineering for Advanced Fuel Cycles and Materials," Department of Nuclear Engineering, Texas A&M University, College Station, TX, March 28, 2006.
9. **S. M. McDeavitt**, "Opportunities in Nuclear Engineering," Presented to the Idaho State University College of Engineering undergraduate students, Pocatello, ID, February 17, 2006.
10. **S. M. McDeavitt**, "Materials Research for Nuclear Fuel Cycles and High Temperature Materials," Presented to Oak Ridge National Laboratory, Oak Ridge, TN, February 6, 2006.
11. **S. M. McDeavitt**, "Materials Research for Nuclear Fuel Cycles and High Temperature Materials," Presented to the Idaho State University College of Engineering, Pocatello, ID, December 13, 2005.
12. **S. M. McDeavitt**, "You Always Need Materials . . . but Perovskite is Optional," Presented to the Purdue University School of Nuclear Engineering, West Lafayette, IN, September 14, 2005.
13. **S. M. McDeavitt**, "Materials Research for Emerging Nuclear Technologies," Presented to the Purdue University School of Materials Science and Engineering, West Lafayette, IN, November 8, 2004.
14. **S. M. McDeavitt**, "Purdue University School of Nuclear Engineering: Emerging Opportunities," Presented at Argonne National Laboratory, Argonne, IL, May 14, 2004.
15. **S. M. McDeavitt**, "Growing Fuel Cycle and Materials Capabilities at Purdue University," Presented at Oak Ridge National Laboratory, Oak Ridge, TN, January 21, 2004.
16. **S. M. McDeavitt**, "Cermet Nuclear Fuel for Advanced Reactor Applications," Presented to the Center for Reactor Information, Argonne National Laboratory, Argonne, IL, May 31, 2002.

17. **S. M. McDeavitt**, "An Overview of Ceramic-Metal Interface Issues in Selected Nuclear Materials Applications," Presented as a Graduate Seminar at the University of Missouri-Rolla in the Department of Nuclear Engineering, Rolla, MO, May 2, 2002.
18. **S. M. McDeavitt,** "An Overview of Ceramic-Metal Interface Issues in Selected Nuclear Materials Applications," Presented as a Graduate Seminar at the University of Illinois at Urbana-Champaign in the School of Nuclear, Plasma and Radiological Engineering, Urbana-Champaign, IL, March 5, 2002.
19. **S. M. McDeavitt**, "Corrosion Testing of Structural Steels in Lead-Based Coolants in Support of ANL Advanced Reactor Concepts," Presented as a Chemical Technology Division Seminar at Argonne National Laboratory, Argonne, IL, January 26, 2001.
20. **S. M. McDeavitt**, "Fuel for a Once-Through Cycle-$(Th,U)O_2$ in a Metal Matrix," Presented at the Center for Reactor Information, Argonne National Laboratory, Argonne, IL, September 29, 2000.
21. **S. M. McDeavitt**, "Materials Research for Nuclear Energy Applications," Presented as a Graduate Seminar at the University of Cincinnati in the School of Materials Science and Engineering, Cincinnati, OH, May 12, 2000.
22. **S. M. McDeavitt**, "Crucible Materials Development Studies," Presented at the Nuclear Technology Seminar Series, Argonne National Laboratory, May 8, 1996.