Universidad Autónoma de Baja California

"2025, año del Turismo Sostenible como impulsor del Bienestar Social y Progreso"

# FACULTAD DE CIENCIAS QUÍMICAS E INGENIERÍA

Oficio No. 355/2025-2

Universidad Autónoma de Baja California
11 SEP 2025
RECTORÍA
RECIBIDO

**DR. LUIS ENRIQUE PALAFOX MAESTRE**
**RECTOR**
PRESENTE

Por medio de la presente y de la manera más atenta, en respuesta al Oficio Circular No. 882/2025-2 emitido por la Secretaría General, me permito someter a su consideración y dentro del orden del día de la próxima sesión del H. Consejo Universitario, la propuesta para otorgar la distinción al grado de Doctor Honoris Causa a la Dra. Olivia Graeve.

Para ello se adjunta el acta de Consejo Técnico de la Facultad de Ciencias Químicas e Ingeniería, propuesta y justificación, así como Currículum Vitae de la Dra. Olivia Graeve.

Agradeciendo de antemano su atención, aprovecho la ocasión para reiterarme a sus apreciables órdenes.

UNIVERSIDAD AUTÓNOMA DE BAJA CALIFORNIA
DESPACHADO
11 SEP 2025
DESPACHADO
FACULTAD DE CIENCIAS QUÍMICAS E INGENIERÍA

ATENTAMENTE
Tijuana, Baja California, 11 de septiembre 2025.
"POR LA REALIZACIÓN PLENA DEL SER"

M.C. ROBERTO ALEJANDRO REYES MARTÍNEZ
DIRECTOR

UNIVERSIDAD AUTÓNOMA DE BAJA CALIFORNIA
FACULTAD DE CIENCIAS QUÍMICAS E INGENIERÍA

c.c.p. M.I. Edith Montiel Ayala –Secretaria General.
c.c.p Minutario

# Acta de Sesión Ordinaria del Consejo Técnico 2023-2025 de la Facultad de Ciencias Químicas e Ingeniería

Con fecha 12 de junio de 2025, a las 13:00 hr se realizó la reunión ordinaria del Consejo Técnico de la Facultad de Ciencias Químicas e Ingeniería, en modalidad presencial, en la sala audiovisual del edificio 6D con un quórum de 15 miembros, de acuerdo a convocatoria enviada en Oficio Circular No. 213/2025-1, con el siguiente orden del día:

1. Lista de Asistencia y declaración de quórum.
2. Lectura y aprobación del orden del día.
3. Observaciones, y en su caso, aprobación del acta de la sesión anterior.
4. Presentación, revisión y aprobación en su caso del reglamento interno de laboratorios del área química.
5. Revisión y aprobación en su caso de la propuesta de otorgar el nombramiento de Doctor Honoris Causa a la Dra. Olivia A. Graeve, que presenta el director.
6. Asuntos generales.
7. Clausura de la sesión.

Se pasó lista de asistencia (documento anexo a la minuta) estando presentes en ese momento los consejeros:

| Consejeros Propietarios | Consejeros Suplentes |
|---|---|
| Dr. Javier Emmanuel Castillo Quiñones | Dra. Ayla Carolina Vea Barragán |
| Dr. Fernando Toyohiko Wakida Kusonoki | Dr. Miguel Ángel Pastrana Corral |
| Dr. Héctor Alfonso Magaña Badilla | Dr. Rafael Eduardo Saavedra Leyva |
| Dr. Diego Armando Trujillo Toledo | Dr. Luis Guillermo Martínez Méndez |
| Dra. Olivia Mendoza Duarte | C. Daniel Salvador Manzano Guzmán |
| C. Ricardo Navarro Quintero | C. Jahzyel Moisés Ramírez Medina |
| C. Ana Karen Epitacio Rosas | C. Hanssel Ballesteros Colmenares |
| | C. Edwin Daniel Arreola Ramírez |
| | |

Los consejeros suplentes Dr. Rafael Eduardo Saavedra Leyva, C. Daniel Salvador Manzano Guzmán, C. Jahzyel Moisés Ramírez Medina y C. Edwin Daniel Arreola Ramírez sustituyeron a sus consejeros propietarios con lo que se determinó quórum legal para llevar a cabo la sesión y se determinó que los acuerdos que se deriven de ella sean válidos. Acto seguido el presidente del Consejo, M.C. Roberto Alejandro Reyes Martínez procedió al segundo punto, pidiéndole al secretario, Dr. Diego Armando Trujillo Toledo dar lectura al orden del día. Una vez terminada la lectura se procedió a la observación de los concejales, no teniendo comentarios que agregar se llevó a cabo la votación del orden del día, **aprobando** de manera unánime.

Posteriormente se abordó el punto tres, sobre el acta de la sesión anterior, no teniendo observaciones se aprobó de manera unánime.

Para el punto número cuatro, el presidente dio lectura a la propuesta de reglamento interno de laboratorios del área química, explicando la necesidad de contar con uno dentro de la facultad. Se registraron las siguientes observaciones:

- Revisar el formato el uso del ";" con el uso de la ",", el cual se debe homogenizar.
- El uso de mayúsculas en palabras que no deben llevarlo.
- Revisar acentos en el artículo 8, sección IV.
- Revisar el uso de plural en el artículo 9, sección VI.
- Revisar semántica en el artículo 16, sección VII.
- En el artículo 29, especificar quien puede autorizar.

Una vez concluidas las observaciones se **aprueba** por unanimidad el reglamento con las modificaciones realizadas.

Para el punto número cinco, se presentó primeramente el reglamento donde se explican los criterios para seleccionar a una persona con el nombramiento de "Doctor Honoris Causa", acto seguido se presenta una breve reseña de los puntos más destacables de la Dra. Olivia Graeve, quien es propuesta por el director de esta facultad para este nombramiento. Al finalizar el Dr. Magaña Badilla menciona el apoyo para que la Dra. tenga el nombramiento, al igual hace mención del apoyo que se ha tenido por parte de la Dra. en muchos eventos en la facultad. Igualmente, el Dr. Trujillo menciona su apoyo para que este nombramiento se lleve a cabo, mencionando algunos proyectos actuales en colaboración. Una vez terminada las observaciones se procede a la votación, teniendo como resultado su **aprobación** por unanimidad.

Para el punto número seis el presidente menciona que también se pueden tener otros nombramientos importantes como Profesor Honorífico, colocar el nombre a un espacio, entre otras opciones. El presidente menciona que primero se debe validar el procedimiento a seguir, por ejemplo, que se haga público y posteriormente se manifiesta la opinión a los concejales y en reunión del consejo se vota. El Dr. Castillo apoya que se dé el seguimiento e incluir también al concejal suplente. El Dr. Magaña, menciona que también se puede utilizar la academia, para obtener propuestas. El Dr. Héctor Magaña se propone para realizar un protocolo para las nuevas propuestas. Dra. Ayla menciona que primero se debe aclarar cómo se realizará la difusión y votación. El presidente propone enviar por correo la propuesta e incluso una votación y además que cada persona que conozca o tenga contacto con jubilados les puede hacer llegar la información, ya que también forman parte de la comunidad de la FCQI. Se sometió a votación **aprobando** de manera unánime que se enviará por correo los candidatos y recabar votación al igual que cada uno podrá contactar a jubilados.

Dra. Ayla menciona también en asuntos generales la entrega de batas que anteriormente se hacia por el sindicato. El presidente menciona que el procedimiento ha cambiado y recursos humanos se estaba encargando del tema.

También en asuntos generales el Dr. Héctor Magaña menciona si se tiene algún plan para colocar espacios con sombra y bancas. El presidente menciona que por el momento no hay algún presupuesto planeado para esta necesidad por lo que se espera trabajar en ello en la próxima planeación, además agregó que se encuentra la Sociedad de Alumnos, quienes pueden trabajar en ello.

Otro tema que se tocó en asuntos generales fue propuesto por el Dr. Luis Martínez, que mencionó sobre alguna reestructuración del Tronco Común de Ingeniería. El presidente comenta que la carrera de Ingeniería Industrial ya se encuentra en los primeros pasos para la reestructuración, y además, están en pláticas con organismos de media superior.

Finalmente, el presidente menciona que el informe de trabajo de dirección se presentará en agosto-septiembre, aún no se tiene fecha esto debido a que se invita a integrantes de la junta de gobierno, en cuanto se tenga información se agendará la fecha.

Siendo las 14:26 hrs se concluyó la sesión de Consejo Técnico de la Facultad de Ciencias Químicas e Ingeniería de la UABC. Se anexa hoja de firma de los participantes.

M.C. Roberto Alejandro Reyes Martínez
Director y Presidente del Consejo Técnico

Dr. Diego Armando Trujillo Toledo
Secretario del Consejo Técnico

Universidad Autónoma de Baja California

Facultad de Ciencias Químicas e Ingeniería

Tijuana Caja California a 12 de junio de 2025

**Lista de asistencia a la reunión de Consejo Técnico jueves 12 de junio a las 13:00 hrs** en la Sala de Diplomados del edificio 6E planta alta.

| Consejeros Propietarios | FIRMA | Consejeros Suplentes | FIRMA |
|---|---|---|---|
| Dr. Javier Emmanuel Castillo Quiñones | | Dr. Arturo Estolano Cobián | |
| Dr. Fernando Toyohiko Wakida Kusunoki | | Dra. Ayla Carolina Vea Barragán | |
| Dr. Héctor Alfonso Magaña Badilla | | Dr. Miguel Ángel Pastrana Corral | |
| Dr. Diego Armando Trujillo Toledo | | Dr. Eduardo Álvarez Guzmán | |
| | | Dr. Rafael Eduardo Saavedra Leyva | |
| Dra. Olivia Mendoza Duarte | | Dr. Luis Gmo. Martínez Méndez | |
| C. Nidia Perla Villa Ortiz | | C. Daniel Salvador Manzano Guzmán | |
| C. Jesús Michael Villa Ortiz | | C. Jahzyel Moisés Ramírez Medina | |
| C. Ricardo Navarro Quintero | | C. Hanssel Ballesteros Colmenares | |
| C. Jorge Alejandro Sandoval Romo | | C. Edwin Daniel Arreola Ramírez | |
| C. Hannah Michelle Sáenz López | | C. Arleth Santos Guerrero | |
| C. Ana Karen Epitacio Rosas | | C. Ana Karen Meza Andrade | |

# Olivia A. Graeve, Ph. D.

**Elias Masry Endowed Professor in Engineering**


## CURRICULUM VITAE


University of California, San Diego – Department of Mechanical and Aerospace Engineering
9500 Gilman Drive – MC 0411, La Jolla, CA 92093-0411
Tel: (858) 246-0146; Fax: (858) 534-5698; E-mail: ograeve@ucsd.edu
URL: http://graeve.ucsd.edu/


♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

## SYNOPSIS

Prof. Olivia A. Graeve joined the University of California San Diego in 2012 and is currently the Elias Masry Endowed Professor of Engineering in the Department of Mechanical and Aerospace Engineering, Director of the *CaliBaja Center for Resilient Materials and Systems*, Director of the Materials Science and Engineering Program, and Affiliated Faculty in the Department of NanoEngineering. Previously, she was an Associate Professor at Alfred University (2008-2012) and an Assistant Professor at the University of Nevada, Reno (2002-2008). She holds a Ph.D. in Materials Science and Engineering (2001) from the University of California, Davis, and a Bachelor of Science degree in Structural Engineering (1995) from the University of California San Diego. Her area of research focuses on the design and processing of new materials for extreme environments, including extremes of temperature, pressure, and radiation.

Professor Graeve has received research grants and contracts from federal agencies such as the National Science Foundation, the Department of Defense, the National Aeronautics and Space Administration, and the Department of Energy, as well as from industrial partners. Her publications include both research and pedagogy and curriculum development contributions, with publications that have appeared in *Chemistry of Materials*, the *Journal of the American Ceramic Society*, *Langmuir*, *ACS Applied Materials & Interfaces*, *Biomaterials*, the *Journal of Physical Chemistry*, the *Journal of Materials Research*, *Scientific Reports*, *Nanotechnology*, the *Journal of Applied Physics*, and *Optical Materials*, among others. She has contributed to the development of human resources both as a research advisor and as an instructor, teaching courses in the general areas of structure and bonding, the mechanical behavior of materials, ceramics processing, and electronic properties of materials. She has served on numerous committees of her primary societies (American Ceramic Society, Materials Research Society, Society of Hispanic Professional Engineers, and Sociedad Mexicana de Materials, A.C.) in many different capacities and actively participates in organizing national and international conferences, as well as serving on various review boards and advisory panels.

Professor Graeve has been involved in many activities related to the recruitment and retention of women and underrepresented minority students in science and engineering and has received several prestigious awards including the National Science Foundation CAREER award, the 2006 Hispanic Educator of the Year award by the Society of Hispanic Professional Engineers, the 2010 Karl Schwartzwalder Professional Achievement in Ceramic Engineering Award by the American Ceramic Society, the 2012 B.J. Harrington Lectureship by McGill University, the 2011 Society of Hispanic Professional Engineers "Jaime Oaxaca" Award (the highest honor given by this society for outstanding service to the Hispanic engineering community), the UC San Diego University Diversity Award (2014), the Outstanding Engineering Educator by the San Diego Chapter of the California Society of Professional Engineers (2015), the Hispanic Engineer National Achievement Educator Award (2017), the SHPE Innovator Award (2017), the SHPE San Diego Service Award (2018), the UC San Diego Faculty Research Lectureship (2019), and the Cigarroa Lectureship by the American Association of Hispanics in Higher Education. She has been inducted into the Tijuana Walk of Fame (2014), the Mexican Academy of Engineering (2016), the Mexican Academy of Sciences (2019), the Academy of Sciences of Latin America (2022), has been named Fellow of the American Ceramic Society (2017), UC San Diego Revelle College (2018), and the American Association for the Advancement of Science (2021). In addition, Forbes Magazine named her one of the 100 Most Powerful Women of Mexico (2017). In 2020, she was honored with the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

## POSITIONS HELD

2024 – present ♦ Elias Masry Endowed Professor in Engineering♦ Jacobs School of Engineering
2022 – present ♦ Director ♦ UC San Diego Program in Materials Science and Engineering (https://matsci.ucsd.edu/)
2015 – present ♦ Director ♦ UC San Diego *CaliBaja Center for Resilient Materials and Systems* (https://resilientmaterials.ucsd.edu/)
2015 – present ♦ Professor ♦ UC San Diego Department of Mechanical and Aerospace Engineering
2024 – 2025 ♦ Chair♦ UC San Diego Academic Senate (https://senate.ucsd.edu/about-the-senate/senate-leadership/division-chair/)
2023 – 2024 ♦ Vice-chair♦ UC San Diego Academic Senate
2022 – 2024 ♦ Jacobs Faculty Scholar ♦ UC San Diego Jacobs School of Engineering
2022 ♦ Visiting Professor ♦ Forschungszentrum Jülich (Jülich, Germany)
2015 – 2021 ♦ Faculty Director ♦ UC San Diego *IDEA Engineering Student Center*
2012 – 2015 ♦ Associate Professor ♦ UC San Diego Department of Mechanical and Aerospace Engineering
2012 – 2015 ♦ Adjunct Professor (courtesy appointment) ♦ Alfred University
2013 – 2014 ♦ Visiting Professor ♦ Universidad Nacional Autónoma de México (Ensenada, México)
2008 – 2013 ♦ Adjunct Professor (courtesy appointment) ♦ University of Nevada, Reno
2008 – 2012 ♦ Associate Professor ♦ Alfred University
2002 – 2008 ♦ Assistant Professor ♦ University of Nevada, Reno
2001 – 2002 ♦ Lecturer ♦ San Jose State University
1999 – 2001 ♦ Lecturer and Associate Provost for Academic Affairs ♦ National Hispanic University
1995 – 1999 ♦ Graduate Teaching and Research Assistant ♦ University of California, Davis
1993 – 1995 ♦ Undergraduate Research Assistant ♦ University of California, San Diego
1991 – 1992 ♦ Tutor, AVID Program ♦ Sweetwater High School, Chula Vista, CA

## EDUCATION

**University of California, Davis**
Graduation Date: March 2001
Degree: Ph.D. in Materials Science and Engineering
Minor: Solid State Science and Thermodynamics
Advisor: Dr. Zuhair A. Munir
Dissertation: The Effect of an Electric Field on the Microstructural Development of Combustion Synthesized Ceramic Composites (https://hdl.handle.net/2027/uc1.x61797)

**University of California San Diego**
Graduation Date: June 1995
Degree: B.S. in Structural Engineering
Minor: Philosophy

## RESEARCH EXPERIENCE

### CURRENT RESEARCH

- Fundamental studies of microemulsions and solvothermal processes for the preparation of ceramic and metallic nanoparticles of unique morphologies.
- The effect of crystallite size and particle size on the sintering behavior of nanopowders: interface behavior, agglomeration effects, morphological effects.
- Luminescence response of doped oxide ceramics for triboluminescent sensor applications, γ-ray detection applications, and *in vitro* probing of deterioration of scaffolds and bone.
- Behavior of metal-based nanofluids for thermal energy dissipation.
- Consolidation and mechanical behavior of amorphous-metal / nanocrystalline-ceramic composites *via* spark plasma sintering.

- Development of hexaboride materials for space propulsion, electro-optics, hydrogen storage applications, and neutron detection applications.
- Processing of carbide powders and fibers for high-temperature sensor and aerospace applications.

### DOCTORAL RESEARCH

- Microstructural development of electric field-assisted combustion synthesized ceramic and intermetallic composites, with a special emphasis on the effect of the electric field on the particle size of the products. Research included the study of TiC-TiNi ceramic/metal composites and TaC nanocrystalline ceramics.
- Effect of reactant starting density on the combustion wave velocity of ceramic composites, as well as computer modeling studies of the combustion process.
- Scientific contributions were published in the *Journal of Materials Research*, the *Journal of Alloys and Compounds*, and the *Journal of Computational Materials Science*.

### UNDERGRADUATE RESEARCH

University of California San Diego, September 1993 – June 1995

- Funded by Sandia (Livermore) National Laboratories to study a novel technique for the synthesis of complex luminescent oxides for field-emission display applications. Materials under study included YAG:$Tm^{3+}$, YAG:$Tb^{3+}$, YAG:$Eu^{3+}$, and YSO:$Ce^{3+}$.
- Investigated, in cooperation with a postdoctoral researcher, the production of luminescent thin-films by pulsed laser deposition and by laser ablation.
- Performed differential thermal analysis studies on the crystallization kinetics of a barium-aluminum-silicon ceramic compounds synthesized from zeolite precursors.
- Scientific contributions were published in the *Journal of the American Ceramic Society,* the *Journal of the Society for Information Displays*, the *Journal of Luminescence*, *Thin Solid Films*, the *Journal of Non-Crystalline Solids*, and the *Journal of Vacuum Science and Technology A*.

## TEACHING EXPERIENCE

### CURRENT TEACHING

University of California, San Diego

- MAE 20 – Elements of Materials Science
  Course web site: http://graeve.ucsd.edu/MAE20.html
- MAE 160 – Mechanical Behavior of Materials
- MAE 251 – Structure and Analysis of Solids
  Course web site: http://graeve.ucsd.edu/MAE251.html
- MAE 253 – Advanced Ceramics
- NANO 156 – Nanomaterials

### PREVIOUS TEACHING

Alfred University, August 2008 – December 2012

- CEMS 216 – Bonding and Structure of Materials
- CEMS 344 – Electronic, Magnetic, and Optical Properties of Materials
- CEMS 438 – Nanotechnology
- CEMS 543 – Analytical Transmission Electron Microscopy

University of Nevada – Reno, July 2002 – June 2008

- MSE 415/615 – Materials Characterization
- MSE 440/640 – Nanomaterials Synthesis
- MSE 450 – Techniques of Process Design, Economics and Safety
- MSE 461/661 – Physical Metallurgy II
- MSE 472 – Introduction to Ceramics

- MSE 482 – Senior Design
- MSE 702G – Electron Microscopy
- MSE 738 – Advanced Ceramic Materials

### LECTURER

San Jose State University, June 2001 – June 2002

- Co-principal investigator in a curriculum development grant funded by the National Science Foundation to develop a new teaching framework for the "Introduction to Materials Engineering" course.
- Principal investigator for a grant to involve one undergraduate student in a research project. The student built a new piece of equipment for the "Introduction to Materials Engineering" laboratory and won second place in a national undergraduate research competition, organized by the Society of Hispanic Professional Engineers.
- Advisor to one student for her senior thesis on the modeling of combustion synthesized tantalum carbide ceramics.
- Webmaster for the "Introduction to Materials Engineering" and "Introduction to Engineering" courses.

#### COURSES TAUGHT

- MatE25 – Introduction to Materials Engineering
- MatE25 Laboratory – Introduction to Materials Engineering Laboratory
- ENGR10 – Introduction to Engineering

### LECTURER and ASSOCIATE PROVOST FOR ACADEMIC AFFAIRS

The National Hispanic University, July 1999 – May 2001

- Responsible for development and maintenance of university schedule of classes and university catalog.
- Responsible for evaluation of teaching effectiveness of part-time faculty, which included approximately 50 instructors.
- Principal investigator on a grant to promote mathematics and science achievement among minority high school students from the local school district. This project was funded by the National Security Agency.

#### COURSES TAUGHT

- MAT 312 – Educational Statistics
- GEO 100 – Introduction to Earth Science
- MAT 108 – Number Systems
- MAT 100 – College Algebra
- PHY 120 – Physics with Laboratory
- CS 108 – JAVA Programming
- CS 106 – C++ Programming
- ANT 100 – Introduction to Anthropology

### TEACHING ASSISTANT

University of California, Davis, January 1998 – June 1998

In cooperation with the faculty, prepared the syllabus, homework assignments, and examinations for ENGR 45 - Introduction to Materials Science and Engineering. Participation as a teaching assistant was in connection to the Program in College Teaching at UC Davis, which also included workshops and other activities aimed at preparing graduate students for future positions as academic faculty members.

## LANGUAGES

Spanish (Native language)
English (Native language)
Portuguese (Intermediate proficiency)

## PROFESSIONAL AFFILIATIONS

American Ceramic Society
Materials Research Society
Society of Hispanic Professional Engineers
Sociedad Mexicana de Materiales
American Association for the Advancement of Science
Mexican Academy of Sciences
Mexican Academy of Engineering
Academy of Sciences of Latin America

## AWARDS and HONORS

- AAHHE Alfredo G. de los Santos Jr. Distinguished Leadership Award (2025)
- Global Ambassador Award, American Ceramic Society (2024)
- Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture Award, American Ceramic Society (2024)
- Forjadora del Año, award from *Madrugadores de Tijuana* [Tijuana "Person of the Year"] (2023)
- Member, Academy of Sciences of Latin America (2022)
- Fellow, American Association for the Advancement of Science (2021)
- Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (2020)
- Member, Mexican Academy of Sciences (2019)
- Fellow, HACU Inaugural *Academia de Liderazgo* / Leadership Academy (2019)
- UC San Diego Chancellor's Associates Community Service Award (2019)
- Cigarroa Lecturer, AAHHE National Conference (February 2019)
- UC San Diego Faculty Research Lecturer Award (2019)
- Fellow, UC San Diego Revelle College Faculty (2018)
- SHPE San Diego Service Award (2018)
- SHPE Innovator Award (2017)
- Hispanic Engineer National Achievement (HENAAC) Education Award (2017)
- Recognized as one of the 100 Most Powerful Women of Mexico by Forbes Magazine (2017)
- Fellow, American Ceramic Society (2017)
- Member, Mexican Academy of Engineering (2016)
- George and Dot Bishop Advanced Materials Lecturer, Clemson University (April 2016)
- Outstanding Engineering Educator, San Diego Chapter of the California Society of Professional Engineers (2015)
- Counselor, *Instituto de los Mexicanos en el Exterior* (2015-2016)
- UC San Diego University Diversity Award (2014)
- Tijuana Walk of Fame (2014)
- International member (Level II) of the Sistema Nacional de Investigadores, Consejo Nacional de Ciencia y Tecnología, México (January 2013 - present)
- B.J. Harrington Lecturer, McGill University (September 2012)
- "Jaime Oaxaca" Award, Society of Hispanic Professional Engineers (2011)
- Karl Schwartzwalder Professional Achievement in Ceramic Engineering (PACE) Award, American Ceramic Society (2010)
- Best Paper Award, Society of Hispanic Professional Engineers Annual Meeting (2009)
- CAREER Award, National Science Foundation (2007)
- Hispanic Educator of the Year, Society of Hispanic Professional Engineers (2006)
- Faculty Member of the Year, National Hispanic University (2000)
- 2nd Place Winner, National Symposium of the Society of Mexican American Engineers and Scientists Graduate Student Technical Paper Competition (1998)

- 1st Place Winner, National Technical and Career Conference Graduate Student Technical Paper Competition, Society of Hispanic Professional Engineers (1997)
- Hispanic Engineer National Achievement (HENAAC) Graduate Student Leadership Award (1997)
- Research Mentorship Program Fellowship, University of California, Davis (1996-1997)
- TOPS Research Fellowship, University of California, Davis (1995-1996)

## SCIENTIFIC PUBLICATIONS

### BOOKS and BOOK CHAPTERS

O.A. Graeve and J.P. Kelly, "High Temperature Materials Processing," in: High Temperature Materials and Mechanisms, edited by Y. Bar-Cohen (CRC Press / Taylor and Francis Group, New York, 2014). ISBN: 9781466566453

J.P. Kelly and O.A. Graeve, "Effect of Powder Characteristics on Nanosintering," in: Sintering Mechanisms of Convention Nanodensification and Field Assisted Processes, edited by R.H.R. Castro and K. van Benthem (Springer Science, New York, 2013), pp. 57-95. ISBN: 978-3-642-31008-9.R.D.

Braun, D.S. Wiley, H.W. Brandhorst Jr., D.C. Byers, D. Chenette, I. Chopra, F.D. Drake, O.A. Graeve, M.G. Jones, R.A. Moore, E. Phillip Muntz, L.R. Young, Fostering Visions for the Future: A Review of the NASA Institute of Advanced Concepts, (The National Academies, Washington, D.C, 2009). ISBN: 978-0-309-14051-5.

O.A. Graeve, "Zirconia," in: Ceramic and Glass Materials: Structure, Properties and Processing, edited by J.F. Shackelford and R.H. Doremus (Springer Science, New York, USA, 2008), pp. 169-197. ISBN-10: 1441944605, ISBN-13: 978-1441944603.

### JOURNAL EDITORSHIPS and SPECIAL ISSUES

*Editor:* Materials Letters; Elsevier (March 2014 – December 2022).

*Editor* (area of Chemical Physics)*:* Scientific Reports; Nature Publishing Group (October 2014 – June 2021).

*Proceedings Editor:* J.L. Rodríguez-López, C. Gutiérrez-Wing, O.A. Graeve, A.G. Palestino-Escobedo, and M. Muñoz-Navia, *Materials Research Society Symposium Proceedings*, vol. 1817 (2016).
DOI: http://dx.doi.org/10.1557/opl.2016.41

*Proceedings Editor:* C. Gutiérrez-Wing, J.L. Rodríguez-López, O.A. Graeve, and M. Muñoz-Navia, *Materials Research Society Symposium Proceedings*, vol. 1479 (2013).
DOI: http://dx.doi.org/10.1557/opl.2013.169

*Proceedings Editor:* C. Gutierrez-Wing, J.L. Rodriguez López, J.J. Boeckl, O.A. Graeve, and P. Soukiassian, *Materials Research Society Symposium Proceedings*, vol. 1371 (2012).
DOI: http://dx.doi.org/10.1557/opl.2012.548

*Journal Guest Editor:* F. Gordaninejad, O.A. Graeve, A. Fuchs, and D. York, *Journal of Intelligent Material Systems and Structures*, Vol. 18, No. 12, December 2007.

*Journal Guest Editor:* F. Gordaninejad, O.A. Graeve, A. Fuchs, and D. York, *International Journal of Modern Physics B*, Vol. 21, Issue 28/29, November 2007.

*Proceedings Editor:* F. Gordaninejad, O.A. Graeve, B.F. Spencer, and D. York, Proceedings of the Third International Workshop on Advanced Smart Materials and Smart Structures Technology, (Techno-Press, Inc., Daejeon, South Korea, 2007). ISBN: 9812771158.

*Proceedings Editor:* F. Gordaninejad, O.A. Graeve, A. Fuchs, and D. York, Proceedings of the 10th International Conference on Electrorheological Fluids and Magnetorheological Suspensions, (World Scientific Publishing Company, Inc., New Jersey, USA, 2007). ISBN: 9812771190.

**JOURNAL PUBLICATIONS**

K. Carrera, V. Huerta, V. Orozco, J. Matutes, A. Urbieta, P. Fernández, F. Martinez, O.A. Graeve, and M. Herrera, "Formation of oxygen vacancies in $Cr^{3+}$-doped hydroxyapatite nanofibers and their role in generating paramagnetism," *Biomedical Materials & Devices*, **3**, 529-544 (2025).
**Manuscript:** https://doi.org/10.1007/s44174-024-00191-3

F.J. Suarez, S. Ojeda Santillán, R. Vazquez-Duhalt, and O.A. Graeve, "Enhanced catalytic stability of laccase immobilized on copper oxide nanoparticles," *ChemCatChem*, 17 [1] e202401232 (2025).
**Manuscript:** http://doi.org/10.1002/cctc.202401232

C.I. Vargas-Consuelos, V.R. Vasquez, and O.A. Graeve, "Electrospinning of $LaB_6$/PEDOT:PSS/PEO fiber composites of unique morphologies," *Langmuir*, **40** [47] 25229-25235 (2024).
**Manuscript:** http://doi.org/10.1021/acs.langmuir.4c03538

M. Blair-Loy, O.V. Mayorova, R. Hegazy, O.A. Graeve, and P.C. Cosman, "Steering women out of engineering: Career assessment tools as a technology of self-expressive segregation," *Sociological Inquiry*, **94** [4] 830-853 (2024).
**Manuscript:** http://doi.org/10.1111/soin.12612

F. Martinez-Pallares, M. Herrera, and O.A. Graeve, "Decomposition of luminescent hydroxyapatite scaffolds in simulated body fluid," *ACS Applied Bio Materials*, **7** [5] 3136-3142 (2024).
**Manuscript:** https://doi.org/10.1021/acsabm.4c00154

A. Yazdani, D. Dewitt, W. Huang, R. Borja-Urby, D. Kisailus, J.E. Garay, and O.A. Graeve, "Mechanical properties of an ultrahard *in situ* amorphous steel matrix composite," *Advanced Engineering Materials*, **26** [11] 2400257 (2024).
**Manuscript:** https://doi.org/10.1002/adem.202400257

E. Novitskaya, M. Amachraa, F. Martínez-Pallares, F. Güell, V. Gómez-Vidales, S.P. Ong, M. Herrera, and O.A. Graeve, "Barium vacancies as the origin of triboluminescence in hexacelsian ceramics: an *ab initio* and experimental investigation," *ACS Applied Optical Materials*, **2** [4] 585-594 (2024).
**Manuscript:** https://doi.org/10.1021/acsaom.4c00010

M. Sanchez, K.A. Acord, S. Frueh, L.M. Rueschhoff, and O.A. Graeve, "Phase transitions and oxidation behavior during oxyacetylene torch testing of TaC-HfC solid solutions," *Advanced Engineering Materials*, **25** [18] 2300138 (2023).
**Manuscript:** https://doi.org/10.1002/adem.202300138

C.I. Vargas-Consuelos, M.A. Camacho-López, V.H. Ramos-Sánchez, and O.A. Graeve, "Phase and morphology control of hexagonal $MoO_3$ crystals via $Na^+$ interactions: A Raman spectroscopy study," *Journal of Physical Chemistry C*, **127** [27] 13136-13148 (2023).
**Manuscript:** https://doi.org/10.1021/acs.jpcc.3c02821

M.I. Piñón-Muñiz, V.H. Ramos-Sánchez, N. Gutiérrez-Méndez, S.B. Pérez-Vega, J.C. Sacramento-Rivero, C.I. Vargas-Consuelos, F.M. Martinez, O.A. Graeve, R.E. Orozco-Mena, A. Quintero-Ramos, M.A. Sánchez-Madrigal, and I. Salmerón, "Potential use of Sotol baggase (*Dasylirion* spp.) as a new biomass source for liquid biofuels production: Comprehensive characterization and ABE fermentation," *Renewable Energy*, **212**, 632-643 (2023).
**Manuscript:** https://doi.org/10.1016/j.renene.2023.05.055

O.A. Graeve, M.S. García-Vázquez, A.A. Ramírez-Acosta, and Z. Cadieux, "Latest advances in manufacturing and machine learning of bulk metallic glasses," *Advanced Engineering Materials*, **25** [9], 2201493 (2023).
**Manuscript:** https://doi.org/10.1002/adem.202201493

S. Choi, R. Vazquez-Duhalt, and O.A. Graeve, “Nonlinear charge regulation for the deposition of silica nanoparticles on polystyrene spherical surfaces,” *Journal of Colloid and Interface Science*, **613**, 747-763 (2022).
**Manuscript:** https://doi.org/10.1016/j.jcis.2022.01.076

O.A. Graeve, J.A. Arróyave García de la Cadena, A.S. Martínez López, “Building compassion and human bridges through research collaborations,” *ACS Omega*, **7** [2] 1542-1546 (2022).
**Manuscript:** https://doi.org/10.1021/acsomega.1c04916

J.P. Kelly, V.S. Vakharia, E. Novitskaya, and O.A. Graeve, “Densification and fracture responses of $(Ta_{1-x}W_x)$–C composites,” *Advanced Engineering Materials*, **24** [8] 2200026 (2022).
**Manuscript:** https://doi.org/10.1002/adem.202200026

R.E. Ridley, H. Fathi-Kelly, J.P. Kelly, V.R. Vasquez, and O.A. Graeve, “Predicting destabilization in salt-containing aqueous reverse micellar colloidal systems,” *ACS Earth and Space Chemistry*, **5** [9] 2223-2232 (2021).
**Manuscript:** https://doi.org/10.1021/acsearthspacechem.1c00148

K. Carrera, V. Huerta, V. Orozco, J. Matutes, P. Fernández, O.A. Graeve, and M. Herrera, "Formation of vacancy point-defects in hydroxyapatite nanobelts by selective incorporation of $Fe^{3+}$ ions in Ca(II) sites. A CL and XPS study," *Materials Science and Engineering B*, **271**, 115308 (2021).
**Manuscript:** https://doi.org/10.1016/j.mseb.2021.115308

T. Ren, R. Tran, S. Lee, A. Bandera, M. Herrera, Z.-G. Li. S.P. Ong, and O.A. Graeve, "Morphology control of tantalum carbide nanoparticles through dopant additions," *Journal of Physical Chemistry C*, **125** [19] 10665-10675 (2021).
**Manuscript:** https://doi.org/10.1021/acs.jpcc.1c01387

S. Choi, C. Cheung, and O.A. Graeve, "Fabrication of continuous linear pores in an SOFC anode using unidirectional carbon fibers as sacrificial templates," *Journal of the American Ceramic Society*, **104** [7] 3030-3041 (2021).
**Manuscript:** https://doi.org/10.1111/jace.17749

E. Novitskaya, J.P. Kelly, S. Bhaduri, and O.A. Graeve, "A review of solution combustion synthesis: an analysis of parameters controlling powder characteristics," *International Materials Reviews*, **66** [3] 188-214 (2021).
**Manuscript:** https://doi.org/10.1080/09506608.2020.1765603

E. Novitskaya, K. Karandikar, K. Cummings, M. Mecartney, and O.A. Graeve, "Hall-Petch effect in binary and ternary alumina / zirconia / spinel composites," *Journal of Materials Research and Technology*, **11**, 823-832 (2021).
**Manuscript:** https://doi.org/10.1016/j.jmrt.2021.01.058

E.M. Bullard, I. Torres, T. Ren, O.A. Graeve, and K. Roy, "Shell mineralogy of a foundational marine species, *Mytilus californianus*, over half a century in a changing ocean," *Proceedings of the National Academy of Sciences*, **118** [3] e2004769118 (2021).
**Manuscript:** https://doi.org/10.1073/pnas.2004769118

E. Novitskaya, A. Manheim, M. Herrera, and O.A. Graeve, "Effect of oxygen vacancies on the mechanoluminescence response of magnesium oxide," *Journal of Physical Chemistry C*, **125** [1] 854-864 (2021).
**Manuscript:** https://dx.doi.org/10.1021/acs.jpcc.0c07674

R.E. Ridley, H. Fathi-Kelly, J.P. Kelly, V.R. Vasquez, and O.A. Graeve, "Predicting the size of salt-containing aqueous Na-AOT reverse micellar water-in-oil microemulsions with consideration for specific ion effects," *Journal of Colloid and Interface Science*, **586**, 830-835 (2021).
**Manuscript:** https://doi.org/10.1016/j.jcis.2020.11.007

R.E. Ridley, E. Alvarado, A.A. Mrse, V.R. Vasquez, and O.A. Graeve, "Phase stability and miscibility in ethanol/AOT/*n*-heptane systems: evidence of multilayered cylindrical and spherical microemulsion morphologies, *Langmuir*, **36** [38] 11274-11283 (2020).
**Manuscript:** https://doi.org/10.1021/acs.langmuir.0c01851

V.J. Huerta, P. Fernández, V. Gómez, O.A. Graeve, and M. Herrera, "Defect-related luminescence properties of hydroxyapatite nanobelts," *Applied Materials Today*, **21**, 100822 (2020).
**Manuscript:** https://doi.org/10.1016/j.apmt.2020.100822

K. Syed, M. Xu, K.K. Ohtaki, D. Kok, K.K. Karandikar, O.A. Graeve, W.J. Bowman, and M.L. Mecartney, "Correlations of grain boundary segregation to sintering techniques in a three-phase ceramic," *Materialia*, **14**, 100890 (2020).
**Manuscript:** https://doi.org/10.1016/j.mtla.2020.100890

A. Yazdani, G.W.H. Höhne, S.T. Misture, and O.A. Graeve, "A method to quantify crystallinity in amorphous metal alloys: a differential scanning calorimetry study," *PLOS ONE*, **15** [6] e0234774 (2020).
**Manuscript:** https://doi.org/10.1371/journal.pone.0234774

S.N. Garner, Z. Li, D. Lee, O.A. Graeve, D.D. Deheyn, and J.M. McKittrick, "Mechanical optimization of diatomite monoliths from freeze-casting for high-throughput applications," *ACS Applied Bio Materials*, **3** [7] 444-4453 (2020).
**Manuscript:** https://doi.org/10.1021/acsabm.0c00438

R.A. Márquez-Montes, V.H. Collins-Martínez, I. Pérez-Reyes, D. Chávez-Flores, O.A. Graeve, and V.H. Ramos-Sánchez, "Electrochemical engineering assessment of a novel 3D-printed filter-press electrochemical reactor for multipurpose laboratory applications," *ACS Sustainable Chemistry & Engineering*, **8** [9] 3896-3905 (2020).
**Manuscript:** https://doi.org/10.1021/acssuschemeng.9b07368

O.A. Graeve, A. Yazdani, J.P. Kelly, R. Kanakala, and J. Tinsley, "Effect of $SiO_2$ on the sintering of cerium-doped lutetium oxyorthosilicate," *Optical Materials*, **100**, 109650 (2020).
**Manuscript:** https://doi.org/10.1016/j.optmat.2020.109650

J. Ha, E. Novitskaya, N. Lam, M. Sanchez, Y.H. Kim, Z. Li, W.B. Im, O.A. Graeve, and J. McKittrick, "Synthesis of $Mn^{4+}$ activated $Na_2SiF_6$ red-emitting phosphors using an ionic liquid," *Journal of Luminescence*, **218**, 116835 (2020).
**Manuscript:** https://doi.org/10.1016/j.jlumin.2019.116835

J.T. Cahill and O.A. Graeve, "Hexaborides: a review of structure, synthesis and processing," *Journal of Materials Research and Technology*, **8** [6] 6321-6335 (2019).
**Manuscript:** https://doi.org/10.1016/j.jmrt.2019.09.041

F. Sánchez-Alejandro, M.C. Baratto, R. Basosi. O. Graeve, and R. Vazquez-Duhalt, "Addition of new catalytic sites on the surface of versatile peroxidase for enhancement of LRET catalysis," *Enzyme and Microbial Technology*, **131**, 109429 (2019).
**Manuscript:** https://doi.org/10.1016/j.enzmictec.2019.109429

S. Qiao, E. Novitskaya, T. Ren, G. Pena, and O.A. Graeve, "Phase and morphology control of magnesium nanoparticles via lithium doping," *Crystal Growth & Design*, **19** [7] 3626-3632 (2019).
**Manuscript:** https://doi.org/10.1021/acs.cgd.8b01616

J. Ha, Y.H. Kim, E. Novitskaya, Z. Wang, M. Sanchez, O.A. Graeve, W.B. Im, S.P. Ong, and J. McKittrick, "Color tunable single-phase $Eu^{2+}$ and $Ce^{3+}$ co-activated $Sr_2LiAlO_4$ phosphors," *Journal of Materials Chemistry C*, **7** [25] 7734-7744 (2019).
**Manuscript:** https://doi.org/10.1039/C8TC05777J

A. Rankin, K. Seo, O.A. Graeve, and J.R.A. Taylor, "No compromise between metabolism and behavior of decorator crabs in reduced pH conditions" *Scientific Reports*, **9**, 6262 (2019).
**Manuscript:** https://doi.org/10.1038/s41598-019-42696-8

K.M. Schmidt, S.T. Misture, O.A. Graeve, and V.R. Vasquez, "Metal hexaboride work functions: surface configurations and the electrical double layer from first-principles," *Advanced Electronic Materials*, **5** [3] 1800074 (2019).
**Manuscript:** https://doi.org/10.1002/aelm.201800074

K.M. Schmidt, R.J. Koch, S.T. Misture, O.A. Graeve, and V.R. Vasquez, "Phase stability analysis of ternary alkaline-earth hexaborides: insights from DFT calculations," *ACS Applied Electronic Materials*, **1** [1] 105-112 (2019).
**Manuscript:** https://doi.org/10.1021/acsaelm.8b00047

K.M. Schmidt, S.T. Misture, O.A. Graeve, and V.R. Vasquez, "Interaction of hydrogen with $MB_6$ (M = Ba, Ca, La, and Sr) surfaces from first principles," *ACS Omega*, **4** [1] 65-72 (2019).
**Manuscript:** https://doi.org/10.1021/acsomega.8b02652

J.T. Cahill, J.P. Kelly, E. Novitskaya, M. McKee, J.A. Bahena, and O.A. Graeve, "Suppressing η-phase development in steel-cemented tungsten carbide: a spark plasma sintering study," *Journal of the American Ceramic Society*, **102** [2] 595-601 (2019).
**Manuscript:** https://doi.org/10.1111/jace.15814

U. Santoro, E. Novitskaya, K. Karandikar, H.E. Khalifa, and O.A. Graeve, "Phase stability of SiC/SiC fiber reinforced composites: the effect of processing on the formation of α and β phases," *Materials Letters*, **241**, 123-127 (2019).
**Manuscript:** https://doi.org/10.1016/j.matlet.2019.01.055

R. Koch, P.C. Metz, O. Jaime, C.I. Vargas-Consuelos, R. Borja-Urby, J.Y. Peter Ko, J.T. Cahill, D. Edwards, V.R. Vasquez, O.A. Graeve, and S.T. Misture, "Nanodomains and local structure in ternary alkaline-earth hexaborides," *Journal of Applied Crystallography*, **51**, 1445-1454 (2018).
**Manuscript:** https://doi.org/10.1107/S1600576718012657

K.K. Ohtaki, M.K. Patel, M.L. Crespillo, K.K. Karandikar, Y. Zhang, O.A. Graeve, and M.L. Mecartney, "Improved high temperature radiation damage tolerance in a three-phase ceramic with heterointerfaces," *Scientific Reports*, **8**, 13993 (2018).
**Manuscript:** https://doi.org/10.1038/s41598-018-31721-x

I.-C. Cheng, J.P. Kelly, E. Novitskaya, V. Eliasson, A.M. Hodge, and O.A. Graeve, "Mechanical properties of an Fe-based SAM2×5-630 metallic glass matrix composite with tungsten particle additions," *Advanced Engineering Materials*, **20** [9] 1800023 (2018).
**Manuscript:** https://doi.org/10.1002/adem.201800023

F.Y. Su, S. Pang, Y.T.T. Ling, P. Shyu, E. Novitskaya, K. Seo, S. Lambert, K. Zarate, O.A. Graeve, I. Jasiuk, and J. McKittrick, "Deproteinization of cortical bone: effects of different treatments," *Calcified Tissue International*, **103** [5] 554-566 (2018).
**Manuscript:** https://doi.org/10.1007/s00223-018-0453-x

A.A. Sapre, E. Novitskaya, V. Vakharia, A. Cota, W. Wrasidlo, S.M. Hanrahan, S. Derenzo, M.T. Makale, and O.A. Graeve, "Optimized scintillator YAG:Pr nanoparticles for X-ray inducible photodynamic therapy," *Materials Letters*, **228**, 49-52 (2018).
**Manuscript:** https://doi.org/10.1016/j.matlet.2018.05.090

T. Ren, L.N. N. Nforbi, R. Kanakala, and O.A. Graeve, "Phase stability and mechanisms of transformation of La-doped γ-alumina," *Inorganic Chemistry*, **57** [6] 3035-3041 (2018).
**Manuscript:** https://doi.org/10.1021/acs.inorgchem.7b02635

J. Ha, E. Novitskaya, G.A. Hirata, C. Zhou, R.E. Ridley, O.A. Graeve, and J. McKittrick, "A facile method using a flux to improve quantum efficiency of submicron particle sized phosphors for solid-state lighting applications," *Ceramics*, **1** [1] 5 (2018).
**Manuscript:** https://doi.org/10.3390/ceramics1010005

K. Seo, K. Sinha, E. Novitskaya, and O.A. Graeve, "Polyvinylpyrrolidone (PVP) effects on iron oxide nanoparticle formation," *Materials Letters*, **215**, 203-206 (2018).
**Manuscript:** https://doi.org/10.1016/j.matlet.2017.12.107

G. Arellano, O. Jaime, and O.A. Graeve, "Latino engineering faculty in the United States," *MRS Bulletin*, **43** [2] 131-133 (2018).
**Manuscript:** https://doi.org/10.1557/mrs.2018.23

E. Novitskaya, S. Díaz-de-la-Torre, T.A. Esquivel-Castro, G.R. Dieguez-Trejo, A. Kritsuk, J.T. Cahill, and O.A. Graeve, "Current assisted extrusion of metallic alloys: insight into microstructure formation and mechanical properties," *Materials Science and & Engineering A*, **717**, 62-67 (2018).
**Manuscript:** https://doi.org/10.1016/j.msea.2018.01.076

K.M. Schmidt, O. Jaime, J.T. Cahill, D. Edwards, S.T. Misture, O.A. Graeve, and V.R. Vasquez, "Surface termination analysis of stoichiometric metal hexaborides: insights from first-principles and XPS measurements," *Acta Materialia*, **144**, 187-201 (2018).
**Manuscript:** https://doi.org/10.1016/j.actamat.2017.10.045

E. Novitskaya, H.E. Khalifa, and O.A. Graeve, "Microhardness and microstructure correlations in SiC/SiC composites," *Materials Letters*, **213**, 286-289 (2018).
**Manuscript:** https://doi.org/10.1016/j.matlet.2017.11.093

M.B. Frank, S.H. Siu, K. Karandikar, C.-H. Liu, S.E. Naleway, M.M. Porter, O.A. Graeve, and J. McKittrick, "Synergistic structures from magnetic freeze casting with surface magnetized alumina particles and platelets," *Journal of the Mechanical Behavior of Biomedical Materials*, **76**, 153-163 (2017).
**Manuscript:** https://doi.org/10.1016/j.jmbbm.2017.06.002

A.S. Alvarez-Suarez, E.A. López-Maldonado, O.A. Graeve, F. Martinez-Pallares, L.E. Gómez-Pineda, M.T. Oropeza-Guzmán, A.L. Iglesias, T. Ng, E. Serena-Gómez, L.J. Villarreal-Gómez, "Fabrication of porous polymeric structures using a simple sonication technique for tissue engineering," *Journal of Polymer Engineering*, **37** [9] 943 (2017).
**Manuscript:** http://doi.org/10.1515/polyeng-2016-0423

J.T. Cahill, V.R. Vasquez, S.T. Misture, D. Edwards, and O.A. Graeve, "Effect of current on diffusivity in metal hexaborides: a spark plasma sintering study," *ACS Applied Materials & Interfaces*, **9** [42] 37357-37363 (2017).
**Manuscript:** http://doi.org/10.1021/acsami.7b04563

F.Y. Su, E.A. Bushong, T.J. Deerinck, K. Seo, O.A. Graeve, D. Kisailus, V.A. Lubarda, and J. McKittrick, "Spines of the porcupine fish: structure, composition, and mechanical properties," *Journal of the Mechanical Behavior of Biomedical Materials*, **73**, 38-49 (2017).
**Manuscript:** https://doi.org/10.1016/j.jmbbm.2017.02.029

L.A Zavala, P. Fernandez, E. Novitskaya, J.N. Diaz, M. Herrera, and O.A. Graeve, "Interconfigurational and intraconfigurational transitions of $Yb^{2+}$ and $Yb^{3+}$ ions in hydroxyapatite: a cathodoluminescence study," *Acta Materialia*, **135**, 35-43 (2017).
**Manuscript:** https://doi.org/10.1016/j.actamat.2017.06.003

J.T. Cahill, M. Alberga, J. Bahena, C. Pisano, R. Borja-Urby, V.R. Vasquez, D. Edwards, S.T. Misture, and O.A. Graeve, "Phase stability of mixed-cation alkaline-earth hexaborides," *Crystal Growth & Design*, **17** [6] 3450-3461 (2017).
**Manuscript:** http://doi.org/10.1021/acs.cgd.7b00391

M.B. Frank, S.E. Naleway, T. Haroush, C.-H. Liu, S.H. Siu, J. Ng, I. Torres, A. Ismail, K. Karandikar, M.M. Porter, O.A. Graeve, and J. McKittrick, "Stiff, porous scaffolds from magnetized alumina particles aligned by magnetic freeze casting," *Materials Science and Engineering C*, **77**, 484-492 (2017).
**Manuscript:** https://doi.org/10.1016/j.msec.2017.03.246

W.D. Turley, G.D. Stevens, R.S. Hixson, E.K. Cerreta, E.P. Daykin, O.A. Graeve, B.M. La Lone, E. Novitskaya, C. Perez, P.A. Rigg, and L.R. Veeser, "Recompression of high explosive-induced shock damage in copper," *Journal of Applied Physics*, **120**, 085904 (2016).
**Manuscript:** http://doi.org/10.1063/1.4962013

T.Q. Phan, J.P. Kelly, M.E. Kassner, V. Eliasson, O.A. Graeve, and A.M. Hodge, "Bulk mechanical properties testing of metallic marginal glass formers," *Journal of Metallurgy*, **2016**, 6508597 (2016).
**Manuscript:** http://doi.org/10.1155/2016/6508597

J. Ha, Z. Wang, E. Novitskaya, G.A. Hirata, O.A. Graeve, S.P. Ong, and J. McKittrick, "An integrated first principles and experimental investigation of the relationship between structural rigidity and quantum efficiency in phosphors," *Journal of Luminescence*, **179**, 297-305 (2016).
**Manuscript:** https://doi.org/10.1016/j.jlumin.2016.07.006

G.R. Khanolkar, M.B. Rauls, J.P. Kelly, O.A. Graeve, A.M. Hodge, and V. Eliasson, "Shock wave response of iron-based *in situ* metallic glass matrix composites," *Scientific Reports*, **6**, 22568 (2016).
**Manuscript:** http://doi.org/10.1038/srep22568

J.P. Kelly, S.M. Fuller, K. Seo, E. Novitskaya, V. Eliasson, A.M. Hodge, and O.A. Graeve, "Designing in situ and ex situ bulk metallic glass matrix composites from marginal glass formers via spark plasma sintering in the super cooled liquid state," *Materials & Design*, **93**, 26-38 (2016).
**Manuscript:** https://doi.org/10.1016/j.matdes.2015.12.130

G. Rojas-George, A. Concha-Balderrama, H. Esparza-Ponce, J. Silva, J.T. Elizalde-Galindo, M.P. Cruz, J.J. Gervacio, O.A. Graeve, G. Herrera, L. Fuentes, and A. Reyes-Rojas, "Local polarization switching in Ba-Ni co-doped $BiFeO_3$ thin films with low rhombohedral-symmetry distortion," *Journal of Materials Science*, **51** [5] 2283-2291 (2016).
**Manuscript:** http://doi.org/10.1007/s10853-015-9530-y

L.A. Zavala-Sanchez, G.A. Hirata, E. Novitskaya, K. Karandikar, M. Herrera, and O.A. Graeve, "Distribution of $Eu^{2+}$ and $Eu^{3+}$ ions in hydroxyapatite: a cathodoluminescence and Raman study," *ACS Biomaterials Science and Engineering*, **1** [12] 1306-1313 (2015).
**Manuscript:** http://doi.org/10.1021/acsbiomaterials.5b00378

K.M. Schmidt, A. Buettner, O.A. Graeve, and V.R. Vasquez, "Interatomic pair potentials from DFT and molecular dynamics for Ca, Ba, and Sr hexaborides," *Journal of Materials Chemistry C*, **3** [33] 8649-8658 (2015).
**Manuscript:** http://dx.doi.org/10.1039/C5TC01398D

K.M. Schmidt, O.A. Graeve, and V.R. Vasquez, "*Ab initio* and molecular dynamics-based pair potentials for lanthanum hexaboride," *Journal of Physical Chemistry C*, **119** [25] 14288-14296 (2015).
**Manuscript:** http://doi.org/10.1021/acs.jpcc.5b01962

J.P. Kelly and O.A. Graeve, "Spark plasma sintering as an approach to the manufacture of bulk materials: feasibility and cost savings," *JOM*, **67** [1] 29-33 (2015).
**Manuscript:** http://doi.org/10.1007/s11837-014-1202-x

J.P. Kelly and O.A. Graeve, "Mechanisms of pore formation in high-temperature carbides: case study of TaC prepared by spark plasma sintering," *Acta Materialia*, **84**, 472-483 (2015).
**Manuscript:** https://doi.org/10.1016/j.actamat.2014.11.005

J.T. Cahill, J.N. Ruppert, B. Wallis, Y. Liu, and O.A. Graeve, "Development of mesoporosity in scandia-stabilized zirconia: particle size, solvent, and calcination effects," *Langmuir*, **30** [19] 5585-5591 (2014).
**Manuscript:** http://doi.org/10.1021/la4049743

C.I. Vargas-Consuelos, K. Seo, M. Camacho-López, and O.A. Graeve, "Correlation between particle size and Raman vibrations in $WO_3$ powders," *Journal of Physical Chemistry C*, **118** [18] 9531-9537 (2014).
**Manuscript:** http://doi.org/10.1021/jp501095y

G. Rojas-George, J. Silva, R. Castañeda, D. Lardizábal, O.A. Graeve, L. Fuentes, and A. Reyes-Rojas, "Modifications in the rhombohedral degree of distortion and magnetic properties of Ba-doped $BiFeO_3$ as a function of synthesis methodology," *Materials Chemistry and Physics*, **146** [1-2] 73-81 (2014).
**Manuscript:** https://doi.org/10.1016/j.matchemphys.2014.02.044

J.A. Inzana, D. Olvera, S.M. Fuller, J.P. Kelly, O.A. Graeve, E.M. Schwarz, S.L. Kates, and H.A. Awad, "3D printing of composite calcium phosphate and collagen scaffolds for bone regeneration," *Biomaterials*, **35** [13] 4026-4034 (2014).
**Manuscript:** https://doi.org/10.1016/j.biomaterials.2014.01.064

O.A. Graeve, H. Fathi, J.P. Kelly, M.S. Saterlie, K. Sinha, G. Rojas-George, R. Kanakala, D.R. Brown, and E.A. Lopez, "Reverse micelle synthesis of oxide nanopowders: Mechanisms of precipitate formation and agglomeration effects," *Journal of Colloid and Interface Science*, **407**, 302-309 (2013).
**Manuscript:** https://doi.org/10.1016/j.jcis.2013.07.003

B. Higgins, O.A. Graeve, and D.D. Edwards, "New methods for preparing submicrometer powders of the tungstate-ion conductor $Sc_2(WO_4)_3$ and its Al and In analogs," *Journal of the American Ceramic Society*, **96** [8] 2402-2410 (2013).
**Manuscript:** http://doi.org/10.1111/jace.12416

O.A. Graeve, M.S. Saterlie, R. Kanakala, S. Diaz de la Torre, and J.C. Farmer, "The kinetics of devitrification of amorphous alloys: the time-temperature-crystallinity diagram describing the spark plasma sintering of Fe-based metallic glasses," *Scripta Materialia*, **69** [2] 143-148 (2013).
**Manuscript:** https://doi.org/10.1016/j.scriptamat.2013.02.019

M.S. Saterlie, H. Sahin, B. Kavlicoglu, Y. Liu, and O.A. Graeve, "Surfactant effects on dispersion characteristics of copper-based nanofluids: a dynamic light scattering study," *Chemistry of Materials*, **24** [17] 3299-3306 (2012).
**Manuscript:** http://doi.org/10.1021/cm203853f

H. Fathi, J.P. Kelly, V.R. Vasquez, and O.A. Graeve, "Ionic concentration effects on reverse micelle size and stability: implications for the synthesis of nanoparticles," *Langmuir*, **28** [25] 9267-9274 (2012).
**Manuscript:** http://doi.org/10.1021/la300586f

R. Kanakala, R. Escudero, G. Rojas-George, M. Ramisetty, and O.A. Graeve, "Mechanisms of combustion synthesis and magnetic response of high-surface area hexaboride compounds," *ACS Applied Materials & Interfaces*, **3** [4] 1093-1100 (2011).
**Manuscript:** http://doi.org/10.1021/am1012276

M. Saterlie, H. Sahin, B. Kavlicoglu, Y. Liu, and O.A. Graeve, "Particle size effects in the thermal conductivity enhancement of copper-based nanofluids," *Nanoscale Research Letters*, **6** (2011) 217.
**Manuscript:** http://doi.org/10.1186/1556-276X-6-217

J.P. Kelly and O.A. Graeve, "Statistical experimental design approach for the solvothermal synthesis of nanostructured tantalum carbide powders," *Journal of the American Ceramic Society*, **94** [6] 1706-1715 (2011).
**Manuscript:** http://doi.org/10.1111/j.1551-2916.2010.04304.x

V.R. Vasquez, B.C. Williams, and O.A. Graeve, "Stability and comparative analysis of AOT/water/isooctane reverse micelle system using dynamic light scattering and molecular dynamics," *Journal of Physical Chemistry B*, **115** [12] 2979-2987 (2011).
**Manuscript:** http://doi.org/10.1021/jp109202f

O.A. Graeve, "Comment on: Photoluminescence efficiencies of nanocrystalline versus bulk $Y_2O_3$:Eu phosphor–revisited," *Journal of the American Ceramic Society*, **94** [8] 2694-2695 (2011).
**Manuscript:** http://doi.org/10.111/j.1551-2916.2011.04482.x

J.P. Kelly, R. Kanakala, and O.A. Graeve, "A solvothermal approach for the preparation of nanostructured carbide and boride ultra-high temperature ceramics," *Journal of the American Ceramic Society*, **93** [10] 3035-3038 (2010).
**Manuscript:** http://doi.org/10.1111/j.1551-2916.2010.04007.x

R. Kanakala, G. Rojas-George, and O.A. Graeve, "Unique preparation of hexaboride nanocubes: a first example of boride formation by combustion synthesis," *Journal of the American Ceramic Society*, **93** [10] 3136-3141 (2010).
**Manuscript:** http://doi.org/10.1111/j.1551-2916.2010.03853.x

O.A. Graeve, A. Madadi, R. Kanakala, and K. Sinha, "Analysis of particle and crystallite size in tungsten nanopowder synthesis," *Metallurgical and Materials Transactions A*, **41** [10] 2691-2697 (2010).
**Manuscript:** http://doi.org/10.1007/s11661-010-0280-9

O.A. Graeve, R. Kanakala, A. Madadi, B.C. Williams, and K.C. Glass, "Luminescence variations in hydroxyapatites doped with $Eu^{2+}$ and $Eu^{3+}$ ions," *Biomaterials*, **31** [15] 4259-4267 (2010).
**Manuscript:** https://doi.org/10.1016/j.biomaterials.2010.02.009

K. Sinha, B. Kavlicoglu, Y. Liu, F. Gordaninejad, and O.A. Graeve, "A comparative study of thermal behavior of iron and copper nanofluids," *Journal of Applied Physics*, **106** [6] 064307 (2009).
**Manuscript:** http://dx.doi.org/10.1063/1.3225574

K. Sinha, B. Pearson, S.R. Casolco, J.E. Garay, and O.A. Graeve, "Synthesis and consolidation of $BaAl_2Si_2O_8$:Eu. Development of an integrated process for luminescent smart ceramic materials," *Journal of the American Ceramic Society*, **92** [11] 2504-2511 (2009).
**Manuscript:** http://dx.doi.org/10.1111/j.1551-2916.2009.03242.x

A. Mishra, S. Banerjee, S.K. Mohapatra, O.A. Graeve, and M. Misra, "Synthesis of carbon nanotube-$TiO_2$ nanotubular material for reversible hydrogen storage," *Nanotechnology*, **19** [44] 445607 (2008).
**Manuscript:** http://dx.doi.org/10.1088/0957-4484/19/44/445607

O.A. Graeve, R. Kanakala, L. Kaufman, K. Sinha, E. Wang, B. Pearson, G. Rojas-George, and J.C. Farmer, "Spark plasma sintering of Fe-based structural amorphous metals (SAM) with $Y_2O_3$ nanoparticle additions," *Materials Letters*, **62** [17-18] 2988-2991 (2008).
**Manuscript:** https://doi.org/10.1016/j.matlet.2008.01.092

A. Gardner, V.R. Vasquez, A. Clifton, and O.A. Graeve, "Molecular dynamics analysis of the AOT/water/isooctane system: effect of simulation time, initial configuration, and model salts," *Fluid Phase Equilibria*, **262** [1-2] 264-270 (2007).
**Manuscript:** https://doi.org/10.1016/j.fluid.2007.09.013

O.A. Graeve and K. Sinha, "Dynamic light scattering study of reverse micellar systems for the synthesis of iron-based nanofluids," *International Journal of Modern Physics B*, **21** [28/29] 4774-4781 (2007).
**Manuscript:** http://dx.doi.org/10.1142/S0217979207045657

O.A. Graeve and J.O. Corral, "Preparation and characterization of rare-earth doped $Y_2O_3$ luminescent ceramics by the use of reverse micelles," *Optical Materials*, **29** [1] 24-30 (2006).
**Manuscript:** https://doi.org/10.1016/j.optmat.2006.03.013

O.A. Graeve, S. Varma, G. Rojas-George, D. Brown, and E.A. Lopez, "Synthesis and characterization of luminescent yttrium oxide doped with Tm and Yb," *Journal of the American Ceramic Society*, **89** [3] 926-931 (2006).
**Manuscript:** http://dx.doi.org/10.1111/j.1551-2916.2006.00845.x

O.A. Graeve and Z.A. Munir, "The effect of an electric field on the microstructural development during combustion synthesis of TiNi-TiC composites," *Journal of Alloys and Compounds*, **340** [1-2] 79-87 (2002).
**Manuscript:** https://doi.org/10.1016/S0925-8388(02)00020-8

O.A. Graeve and Z.A. Munir, “Electric field enhanced synthesis of nanostructured tantalum carbide,” *Journal of Materials Research*, **17** [3] 609-613 (2002).
**Manuscript:** http://dx.doi.org/10.1557/JMR.2002.0086

O.A. Graeve, E.M. Carrillo-Heian, A. Feng, and Z.A. Munir, “Modeling of wave configuration during electrically ignited combustion synthesis,” *Journal of Materials Research*, **16** [1] 93-100 (2001).
**Manuscript:** http://dx.doi.org/10.1557/JMR.2001.0018

E.M. Carrillo-Heian, O.A. Graeve, A. Feng, J.A. Faghih, and Z.A. Munir, “Modeling studies of the effect of thermal and electrical conductivities and relative density on field-activated self-propagating combustion synthesis,” *Journal of Materials Research*, **14** [5] 1949-1958 (1999).
**Manuscript:** http://dx.doi.org/10.1557/JMR.1999.0263

A. Feng, O.A. Graeve, and Z.A. Munir, “Modeling solution for electric field-activated combustion synthesis,” *Computational Materials Science*, **12** [2] 137-155 (1998).
**Manuscript:** https://doi.org/10.1016/S0927-0256(98)00038-X

B. Hoghooghi, J.M. McKittrick, E. Helsel, and O.A. Lopez, "Microstructural development, densification and hot pressing of celsian ceramics from ion-exchanged zeolite precursors," *Journal of the American Ceramic Society*, **81** [4] 845-852 (1998).
**Manuscript:** http://dx.doi.org/10.1111/j.1151-2916.1998.tb02418.x

O.A. Lopez, J.M. McKittrick, and L.E. Shea, "Fluorescence properties of polycrystalline $Tm^{3+}$-activated $Y_3Al_5O_{12}$ and $Tm^{3+}$-$Li^{+}$ co-activated $Y_3Al_5O_{12}$ in the visible and near IR ranges," *Journal of Luminescence*, **71** [1] 1-11 (1997).
**Manuscript:** https://doi.org/10.1016/S0022-2313(96)00123-8

L.E. Shea, J. McKittrick, O.A. Lopez, E. Sluzky, M.L.F. Phillips, “Advantages of self-propagating combustion reactions for synthesis of oxide phosphors,” *Journal of the Society for Information Display*, **5** [2] 117-125 (1997).
**Manuscript:** https://doi.org/10.1889/1.1985140

G.A. Hirata, J. McKittrick, T. Cheeks, J.M. Siqueiros, J.A. Diaz, O. Contreras, and O.A. Lopez, "Synthesis and optoelectronic characterization of gallium doped zinc oxide transparent electrodes," *Thin Solid Films*, **288** [1-2] 29-31 (1996).
**Manuscript:** https://doi.org/10.1016/S0040-6090(96)08862-1

L.E. Shea, J.M. McKittrick, O.A. Lopez, and E. Sluzky, "Synthesis of red-emitting, small particle size luminescent oxides using an optimized combustion process," *Journal of the American Ceramic Society*, 79 [12] 3257-3265 (1996).
**Manuscript:** http://dx.doi.org/10.1111/j.1151-2916.1996.tb08103.x

J. McKittrick, B. Hoghooghi, and O.A. Lopez, "Vitrification and crystallization of barium aluminosilicate glass ceramics from zeolite precursors," *Journal of Non-Crystalline Solids*, **197** [2-3] 170-178 (1996).
**Manuscript:** https://doi.org/10.1016/0022-3093(95)00543-9

G.A. Hirata, O.A. Lopez, L.E. Shea, J.Y. Yi, T. Cheeks, J. McKittrick, J. Siqueiros, M. Avalos-Borja, A. Esparza, and C. Falcony, “Pulsed laser deposition of $Y_3Al_5O_{12}$:Tb photoluminescent thin films,” *Journal of Vacuum Science and Technology A*, **14** [3] 1694-1696 (1996).
**Manuscript:** http://dx.doi.org/10.1116/1.580321

G.A. Hirata, J. McKittrick, J. Siqueiros, O.A. Lopez, T. Cheeks, O. Contreras, and J.Y. Yi, “High transmittance-low resisitivity ZnO:Ga films by laser ablation,” *Journal of Vacuum Science and Technology A*, **14** [3] 791-794 (1996).
**Manuscript:** http://dx.doi.org/10.1116/1.580391

G.A. Hirata, J. McKittrick, L.E. Shea, O.A. Lopez and M. Avalos-Borja, "Luminescent oxide thin films grown by pulsed laser deposition," *Journal of the Society for Information Display*, **4** [4] 347-349 (1996).
**Manuscript:** https://doi.org/10.1889/1.4731190

G.A. Hirata, J. McKittrick, O.A. Lopez and M. Avalos-Borja, "Thin conductive gallium doped zinc oxide grown by pulsed laser deposition," *Journal of the Society for Information Display*, **4** [4] 343-345 (1996).
**Manuscript:** https://doi.org/10.1889/1.4731189

**PROCEEDINGS PUBLICATIONS**

L. Trahan, G. Miranda, and O.A. Graeve, "Reflecting on 10 years of centralized engineering student diversity initiatives (experience)," in: ASEE Virtual Annual Conference (2021).
**Manuscript:** https://peer.asee.org/37650

G.R. Khanolkar, J.P. Kelly, O.A. Graeve, A.M. Hodge, and V. Eliasson, "Shock wave response of iron-based metallic glass matrix composites," in: 30th International Symposium on Shock Waves 2, edited by G. Ben-Dor, O. Sadot, and O. Igra (Springer, Cham, 2017), pp. 913-915.
**Manuscript:** https://doi.org/10.1007/978-3-319-44866-4_22

B.M. Clark, J.P. Kelly, and O.A. Graeve, "Recent advances on bulk tantalum carbide produced by solvothermal synthesis and spark plasma sintering," *Materials Research Society Symposium Proceedings*, **1485** (2013) 9-20. **Invited Paper**.
**Manuscript:** http://dx.doi.org/10.1557/opl.2013.207

K. Hadadi, M. Redjdal, E.H. Jordan, O.A. Graeve, and C.M. Brunet, "Uniform microwave plasma pyrolysis for the production of metastable nanomaterials," *Ceramic Transactions*, **240** (2013) 99-104. ISBN: 978-1-118-74409-3
**Manuscript:** https://doi.org/10.1002/9781118744109.ch11

B.M. Clark, J.P. Kelly, and O.A. Graeve, "Exploring the synthesis parameters and spark plasma sintering of tantalum carbide powders prepared by solvothermal synthesis," *Materials Research Society Symposium Proceedings*, **1373** (2012) 7-17. **Invited Paper.**
**Manuscript:** http://dx.doi.org/10.1557/opl.2012.289

S.H. Gleixner, E. Douglas, and O. Graeve, "Engineering project laboratory modules for an introduction to materials course," *Proc. 2008 ASEE Annual Conf. & Expo*., **989** (2008) 13.519.1-13.519.13.

O.A. Graeve and K. Sinha, "Dynamic light scattering study of reverse micellar solutions for the synthesis of magnetic nanoparticles," in: Proceedings of the 10th International Conference on Electrorheological Fluids and Magnetorheological Suspensions, edited by: F. Gordaninejad, O.A. Graeve, A. Fuchs, and D. York (World Scientific Publishing Company, New Jersey, 2007), pp. 29-34.

S.H. Gleixner, E. Douglas, and O. Graeve, "PRIME modules: teaching introduction to materials engineering in the context of modern technologies," *Proc. 2007 ASEE Annual Conf. & Expo*., **1852** (2007).

O.A. Graeve, H. Singh, and A. Clifton, "Synthesis and consolidation of zirconia powders via a unique reverse micelle synthesis process and spark plasma sintering," *Ceramic Transactions*, **194** (2006) 209-223. **Invited Paper**. ISBN: 978-0-470-08156-3

S.H. Gleixner, E. Douglas, and O. Graeve, "Project-based introductory to materials engineering modules on biomaterials, solid oxide fuel cells, non-volatile memory, and fiber reinforced plastics," *Proc. 2006 ASEE Annual Conf. & Expo*., **2202** (2006).

H. Singh and O.A. Graeve, "Reverse micelle synthesis of zirconia powders: The use of hydrogen peroxide as washing solvent," *Materials Research Society Symposium Proceedings*, **879E** (2005) Z10.28.1-Z10.28.6.
**Manuscript:** http://dx.doi.org/10.1557/PROC-879-Z10.28

S.H. Gleixner, E. Douglas, O. Graeve, H. Lackritz, L. Demsetz, and A. Moll, "Development of project-based introductory to materials engineering modules," *Proc. 2005 ASEE Annual Conf. & Expo*., **1526** (2005).

L.E. Shea, J.M. McKittrick, O.A. Lopez, and E. Sluzky, "Effect of processing parameters on luminescence of combustion-synthesized, rare earth activated $Y_3Al_5O_{12}$ phosphors," *Ceramic Transactions*, **67** (1996) 105-108.

B. Hoghooghi, J.M. McKittrick, E. Helsel, and O.A. Lopez, "Viscous deformation of glass ceramics in barium aluminosilicates," in: Proceedings of the 5th International Symposium on Ceramic Materials and Components for Engines, edited by D.S. Yan, S.R. Fu, and S.X. Shi (World Scientific, Singapore, 1995), pp. 644-647.

B. Hoghooghi, J.M. McKittrick, C. Butler, E. Helsel, and O.A. Lopez, "Near-net-shape forming of celsian ceramics from ion-exchanged zeolite precursors," *Materials Research Society Symposium Proceedings*, **346** (1994) 493-498.
**Manuscript:** http://dx.doi.org/10.1557/PROC-346-493

## OTHER PUBLICATIONS

O.A. Graeve, "I'll Take Teaching," *SHPE Magazine*, November 1999, pp. 56-60.

O.A. Graeve and C.N. Nin, "A Road Map to Graduate School," *SHPE Magazine*, August/September 2000, pp. 78-79.

## PATENTS

M.T. Makale, W.J. Wrasidlo, S. Kesari, J. McKittrick, G.A. Hirata Flores, O. Graeve, “Scintillator nanocrystal-containing compositions and methods for their use,” US Patent application number US 2016/0250330 A1, filing date 24 February 2016.

J.C. Farmer, F.M.G. Wong, J.J. Haslam, N. Yang, E.J. Lavernia, C.A. Blue, O.A. Graeve, R. Bayles, J.H. Perepezko, L. Kaufman, J. Schoenung, and L. Ajdelsztajn, "Corrosion resistant amorphous metals and methods of forming corrosion resistant amorphous metals," US Patent number 8,778,459 B2, issued on July 15, 2014.

O.A. Graeve, R. Kanakala, and G. Rojas-George, “Combustion synthesis method and boron-containing materials produced therefrom,” US Patent number 8,557,208 issued on October 15, 2013.

J.C. Farmer, F.M.G. Wong, J.J. Haslam, N. Yang, E.J. Lavernia, C.A. Blue, O.A. Graeve, R. Bayles, J.H. Perepezko, L. Kaufman, J. Schoenung, and L. Ajdelsztajn, "Corrosion resistant amorphous metals and methods of forming corrosion resistant amorphous metals," US Patent number 7,618,500, issued on November 17, 2009.

## TECHNICAL REPORTS

Frontiers in Data Analytics and Monitoring Tools for Extreme Materials: Proceedings of a Workshop, (The National Academies Press, Washington, DC, 2023). ISBN 978-0-309-70226-3
**Report:** https://doi.org/10.17226/26983.

NSF Efforts to Achieve the Nation’s Vision for the Materials Genome Initiative: Designing Materials to Revolutionize and Engineer our Future (DMREF), (The National Academies Press, Washington DC, 2022). ISBN: 978-0-309-69401-8
**Report:** https://doi.org/10.17226/26723

An Assessment of the Center for Neutron Research at the National Institute of Standards and Technology: Fiscal Year 2021, (The National Academies Press, Washington DC, 2022). ISBN: 978-0-309-274560-2
**Report:** https://doi.org/10.17226/26418

2019-2020 Assessment of the Army Research Laboratory, (The National Academies Press, Washington DC, 2021). ISBN: 978-0-309-09407-8
**Report:** https://doi.org/10.17226/26325

An Assessment of the Material Measurement Laboratory at the National Institute of Standards and Technology: Fiscal Year 2020 (2021), (The National Academies Press, Washington, DC, 2021). ISBN: 978-0-309-25568-4
**Report:** https://doi.org/10.17226/26048

Assessment of the In-House Laboratory Independent Research at the Army's Research, Development, and Engineering Centers, (The National Academies Press, Washington, DC, 2019). ISBN: 978-0-309-49932-3
**Report:** https://doi.org/10.17226/25611

Frontiers in Thermal Transport and Energy Conversion: Proceedings of a Workshop, (The National Academies Press, Washington, DC, 2019). ISBN: 978-0-309-49670-4
**Report:** https://doi.org/10.17226/25549

2017-2018 Assessment of the Army Research Laboratory, (The National Academies Press, Washington DC, 2019). ISBN: 978-0-309-49154-9
**Report:** https://doi.org/10.17226/25419

2017-2018 Assessment of the Army Research Laboratory: Interim Report, (The National Academies Press, Washington DC, 2018). ISBN 978-0-309-47161-9
**Report:** https://doi.org/10.17226/25011

J.C. Farmer, J.-S. Choi, J.F. Haslam, S.D. Day, N. Yang, T. Headley, G. Lucadamo, J.L. Yio, J. Chames, A. Gardea, M. Clift, C.A. Blue, W. Peters, J.D.K. Rivard, D.C. Harper, D. Swank, R. Bayles, E.J. Lemieux, R. Brown, T.M. Wolejsza, L.F. Aprigliano, D.J. Branagan, M.C. Marshall, B.E. Meacham, E.J. Buffa, M.B. Beardsley, E.J. Lavernia, J. Schoenung, L. Ajdelsztajn, J. Dannenberg, O.A. Graeve, J.J. Lewandowski, J.H. Perepezko, K. Hildal, L. Kaufman, and J. Boudreau, "High-Performance Corrosion-Resistant Iron-Based Amorphous Metal Coatings," UCRL-TR-234800 (September 20, 2007).
**Report:** http://www.osti.gov/servlets/purl/926068-rXd6DY/

## GRADUATE ADVISEMENT ACTIVITIES

### POST-DOCTORAL RESEARCHERS + STAFF SCIENTISTS

Dr. Fabián Martinez-Pallares (April 2024 – present)

Dr. Ekaterina Novitskaya (August 2013 – October 2017; August 2018 – present)

Dr. Oscar Jaime Acuña (September 2015 – August 2016; September 2017 – June 2022)

Dr. James P. Kelly (March 2013 – December 2014)
Currently: Staff Scientist, Lawrence Livermore National Laboratory

Dr. Raghunath Kanakala (January 2009 – July 2011)
Currently: Vice Provost, School of Engineering, Technology, Mathematics, and Sciences, Dalla College

### VISITING SCHOLARS

Prof. Mireya Saraí García Vazquez (January 2024 – January 2025)
Instituto Politécnico Nacional

Ms. Aranza Martínez López (January 2022 – June 2023)
Universidad Politécnica de Sinaloa

Prof. Frank Güell (January – June 2023)
Universidad de Barcelona

Prof. José Alberto Mendoza Espinoza (January–December 2022)
Universidad Autónoma de la Ciudad de México

Prof. Erwin García Hernández (June 2021 – June 2022)
Instituto Tecnológico Superior de Zacapoaxtla

Prof. Laura Elena López Imperial (June–August 2021)
Instituto Tecnológico de Hermosillo

Prof. Miguel Angel Couoh Novelo (Summer 2021)
Instituto Tecnológico de Tizimín

Prof. Victor Hugo Ramos Sánchez (September 2019 – July 2020)
Universidad Autónoma de Chihuahua

Ms. Mari Eyla Aguilar Hérnandez (June – August 2018)
Instituto Politécnico Nacional

Mr. Isaac Muñóz Juárez (June – August 2018)
Instituto Politécnico Nacional

Mr. Jesús Zapata (January – June 2017)
Instituto Tecnológico de Tijuana

Dr. Seyed Amirfakhri (September 2015 – December 2016)

Dr. Rafael Navarro (September 2013 – December 2016)
Lincoln High School

Ms. Flor Sanchez (August 2015)
Universidad Nacional Autónoma de México

Prof. José Manuel Paz Fernandez (July 2015).
Universidad Autónoma de Baja California

Prof. Frank Güell (September – November 2014)
Universidad de Barcelona

Ms. Nuyeli Izaguirre (June – August 2014)
Universidad Nacional Autónoma de México

Dr. Nedjma Bouzidi (November – December 2013)
Université de Bejaia

Dr. Ziyad Shehab (June 2013 – December 2013)
Iraqi Ministry of Science and Technology

Prof. Sergio A. Gamboa (August 2012 – November 2012)
Universidad Nacional Autónoma de México

Mr. C. Ingram Vargas-Consuelos (June 2012 – August 2012)
Universidad Autónoma del Estado de México

Prof. Jaime Guerrero (April 2012 – July 2012)
Universidad Autónoma del Estado de Hidalgo

Mr. Alfredo Luján (April 2012 – May 2012)
Instituto Politécnico Nacional

Mr. Alan O. Guevara-Laureano (November 2011 – February 2012)
Universidad Michoacana de San Nicolás de Hidalgo

**CURRENT GRADUATE STUDENTS**

| | |
|---|---|
| **Jordan Campbell** | Ph.D. Materials Science and Engineering, UC San Diego |
| Tentative Graduation Date: | June 2026 |
| **Jenna Metera** | Ph.D. Materials Science and Engineering, UC San Diego |
| Tentative Graduation Date: | June 2026 |
| **Javier Suarez** | Ph.D. Materials Science and Engineering, UC San Diego |
| Tentative Graduation Date: | June 2026 |
| **Alan Hirales** | Ph.D. NanoEngineering, UC San Diego |
| Tentative Graduation Date: | June 2026 |

**Stephanie Ortega** — Ph.D. Mechanical Engineering, UC San Diego
Tentative Graduation Date: June 2026

**Shari Estrada** — Ph.D. Aerospace Engineering, UC San Diego
Tentative Graduation Date: June 2027

**César Martínez** — Ph.D. Aerospace Engineering, UC San Diego
Tentative Graduation Date: June 2027

**Senam Tamakloe** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2027

**Sergio Ojeda** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2027

**Nicholas Casañas** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2028

**Ben Schauer** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2028

**Jonathan Parra Santiago** — Ph.D. Mechanical Engineering, UC San Diego
Tentative Graduation Date: June 2028

**José Arturo García Cortes** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2029

**Luis Angel Rojas Mercado** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2029

**Paulina Cortes Diaz** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2029

**Lidia Vazquez** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2029

**Andrea Dorado** — Ph.D. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: June 2029

**Yiwen Ji** — M.S. Materials Science and Engineering, UC San Diego
Tentative Graduation Date: December 2025

**Nick Fantaske** — M.S. Chemistry, UC San Diego
Tentative Graduation Date: June 2026

**FORMER PhD STUDENTS**

**Fabian Martinez-Pallares** — Ph.D. Materials Science and Engineering
Graduation Date: March 2024
Institution: University of California San Diego
Thesis Title: Luminescent Hydroxyapatite: Degradation Study and Osteogenic Potential

**C. Ingram Vargas-Consuelos** — Ph.D. Materials Science and Engineering
Graduation Date: December 2023
Institution: University of California San Diego
Thesis Title: A Fundamental Study of the Electrical Resistivity of Hexaboride Particles and their Integration Into Nanofiber Composites

| | |
|---|---|
| **Maritza Sanchez** | Ph.D. Materials Science and Engineering |
| Graduation Date: | June 2023 |
| Institution: | University of California San Diego |
| Thesis Title: | A Study on Faceted Particle Formation of Perovskites and Oxidation Behavior of Carbides |
| **Seongcheol Choi** | Ph.D. Materials Science and Engineering |
| Graduation Date: | August 2021 |
| Institution: | University of California San Diego |
| Thesis Title: | Behaviors of Silica Nanoparticle Deposition and Gold Coating on Polystyrene Particles |
| **Tianqi Ren** | Ph.D. Materials Science and Engineering |
| Graduation Date: | June 2021 |
| Institution: | University of California San Diego |
| Thesis Title: | Exploring the Morphological Control and Formation Mechanisms of Ultra-high Temperature Ceramic Particles: A Study on Tantalum Carbide |
| **Hamed Hosseini-Toudeshki** | Ph.D. Mechanical Engineering |
| Graduation Date: | December 2020 |
| Institution: | University of California San Diego |
| Thesis Title: | Superelasticity and Shape Memory Behavior in $LaNbO_4$ Functional Ceramic |
| **Arash Yazdani** | Ph.D. Materials Science and Engineering |
| Graduation Date: | August 2020 |
| Institution: | University of California San Diego |
| Thesis Title: | Structural Analysis and Mechanical Properties of Amorphous Steel Composites |
| **Robyn Ridley** | Ph.D. Materials Science and Engineering |
| Graduation Date: | August 2020 |
| Institution: | University of California San Diego |
| Thesis Title: | A Fundamental Study of Ternary Microemulsion Systems for Nanoparticle Synthesis |
| **Shuang Qiao** | Ph.D. Materials Science and Engineering |
| Graduation Date: | December 2019 |
| Institution: | University of California San Diego |
| Thesis Title: | Electrical Conductivity of Stabilized Mesoporous Ceramic Fluid Suspensions with Varying pH Values |
| **Keyur K. Karandikar** | Ph.D. Mechanical Engineering |
| Graduation Date: | March 2018 |
| Institution: | University of California San Diego |
| Thesis Title: | Particle Size/Grain Size Correlation and Mechanical Properties of Spark Plasma Sintered 8Y-$ZrO_2$, $MgAl_2O_4$, and $Al_2O_3$ Based Composites |
| **James T. Cahill** | Ph.D. Materials Science and Engineering |
| Graduation Date: | December 2016 |
| Institution: | University of California San Diego |
| Thesis Title: | A Study on the Phase Stability and Diffusion Behavior of Alkaline-Earth Hexaborides |

**Hoorshad Fathi-Kelly** Ph.D. Materials Science and Engineering
Graduation Date: May 2014
Institution: Alfred University
Thesis Title: Reverse Micelle Size and Stability during Electrolyte Encapsulation and Implications for the Synthesis of Nanomaterials

**James P. Kelly** Ph.D. Ceramic Engineering
Graduation Date: May 2013
Institution: Alfred University
Thesis Title: The Scaled-Up Synthesis of Nanostructured Ultra-High-Temperature Ceramics and Resistance Sintering of Tantalum Carbide Nanopowders

**Raghunath Kanakala** Ph.D. Materials Science and Engineering
Graduation Date: December 2008
Institution: University of Nevada, Reno
Thesis Title: Exploring the Synthesis of Hexaborides: The Basis of a New Chemistry for the Preparation of Electro-Optical Materials

**Kaustav Sinha** Ph.D. Materials Science and Engineering
Graduation Date: December 2008
Institution: University of Nevada, Reno
Thesis Title: Particle Engineering for the Formulation of Smart Functional Fluids – Novel Synthesis, Processing and Comparative Analysis of Magnetic Nanoparticles and Fluids

**FORMER MASTER'S STUDENTS**

**Jin Zhou** M.S. Materials Science and Engineering
Graduation Date: June 2022
Institution: University of California San Diego
Thesis Title: Characterization of Barium Titanate and Strontium Titanate Nanoparticles Synthesized by Hydrothermal and Molten-salt Methods

**Xiang Li** M.S. Materials Science and Engineering
Graduation Date: June 2022
Institution: University of California San Diego
Thesis Title: The Preparation and Characterization of a New Garnet $CaEr_2Mg_2Si_3O_{12}$ Phosphor Matrix for White LEDs

**Travis Lawrence** M.S. Mechanical Engineering
Graduation Date: June 2022
Institution: University of California San Diego
Thesis Title: Development of Structural Amorphous Metal Fibers

**Nada Qari** M.S. Materials Science and Engineering
Graduation Date: August 2019
Institution: University of California San Diego
Thesis Title: The Effect of Crystallinity on the Corrosion Behavior of SAM2×5 Amorphous Steel *In Situ* Composite

**Carson Cheung** M.S. Materials Science and Engineering
Graduation Date: December 2018
Institution: University of California San Diego
Thesis Title: Fabrication of a Porous Anode with Continuous Linear Pores by Using Unidirectional Carbon Fibers as Sacrificial Templates to Improve the Performance of Solid Oxide Fuel Cells

| | |
|---|---|
| **Uriel Santoro** | M.S. Materials Science and Engineering |
| Graduation Date: | December 2018 |
| Institution: | University of California San Diego |
| Thesis Title: | SiC/SiC Fiber-Reinforced Composites: The Effect of Processing, Mechanical Properties, and Phase Transformation |
| **Ryan Johnson** | M.S. Materials Science and Engineering |
| Graduation Date: | March 2018 |
| Institution: | University of California San Diego |
| Thesis Title: | Investigating the Potential to Control the Morphology of Hydroxyapatite via Micrometer Scale Molding and Casting Techniques |
| **Boyao Zhang** | M.S. Materials Science and Engineering |
| Graduation Date: | December 2015 |
| Institution: | University of California San Diego |
| Thesis Title: | Devitrification Behavior and Interface Microstructure of Ni-based Amorphous Foils During Spark Plasma Sintering |
| **Colby M. Brunet** | M.S. Ceramic Engineering |
| Graduation Date: | August 2012 |
| Institution: | Alfred University |
| Thesis Title: | Advanced Processing of Magnesium Oxide Nanocomposites for IR Window Applications |
| **Michael S. Saterlie** | M.S. Ceramic Engineering |
| Graduation Date: | December 2010 |
| Institution: | Alfred University |
| Thesis Title: | Synthesis and Thermal Conductivity Enhancement through the Dispersion of Surfactant Stabilized Copper Nanoparticles in Water |
| **Brandon C. Williams** | M.S. Ceramic Engineering |
| Graduation Date: | December 2010 |
| Institution: | Alfred University |
| Thesis Title: | A Study in Solution Molarity for the Reverse Micelle Synthesis of Nanocrystalline Oxides |
| **Lum-Ngwegia Ngwa Nforbi** | M.S. Materials Science and Engineering |
| Graduation Date: | December 2010 |
| Institution: | University of Nevada, Reno |
| Thesis Title: | Phase Stability Analysis of Lanthanum-Doped Alumina During Synthesis and Sintering |
| **Jesse N. Ruppert** | M.S. Materials Science and Engineering |
| Graduation Date: | December 2009 |
| Institution: | University of Nevada, Reno |
| Thesis Title: | Development of Zirconia-Based Mesoporous Materials for Intermediate-Temperature Solid-Oxide Fuel Cells |
| **Amrita Mishra** | M.S. Materials Science and Engineering |
| Graduation Date: | December 2009 |
| Institution: | University of Nevada, Reno |
| Thesis Title: | Design and Reversible Hydrogen Storage Capacity Determination of Unique Nanoarrays of $TiO_2$ and Carbon Nanotubes |

**Brett Pearson** — M.S. Materials Science and Engineering
Graduation Date: December 2008
Institution: University of Nevada, Reno
Thesis Title: Exploring the Processing Parameters for the Preparation of Luminescent Lutetium Oxyorthosilicate (LSO:Ce) Polycrystalline Ceramics for □-ray Detection

**Raghunath Kanakala** — M.S. Materials Science and Engineering
Graduation Date: August 2008
Institution: University of Nevada, Reno
Thesis Title: Spark Plasma Sintering of Structurally Amorphous Metal (SAM7) with Addition of $Y_2O_3$ Nanoparticles

**Abhiram Madadi** — M.S. Metallurgical Engineering
Graduation Date: December 2007
Institution: University of Nevada, Reno
Thesis Title: A New Approach for the Synthesis of Tungsten Nanopowders

**Andrew Clifton** — M.S. Metallurgical Engineering
Graduation Date: December 2006
Institution: University of Nevada, Reno
Thesis Title: Novel Processing of Nanostructured Yttria-Stabilized Zirconia

**Kaustav Sinha** — M.S. Metallurgical Engineering
Graduation Date: August 2005
Institution: University of Nevada, Reno
Thesis Title: An Approach to Develop Reverse Micelle Large-Scale Synthesis Process for Magnetic Nanopowders

**Jessica O. Corral** — M.S. Metallurgical Engineering
Graduation Date: December 2004
Institution: University of Nevada, Reno
Thesis Title: Preparation of Rare-Earth ($Eu^{3+}$, $Tb^{3+}$, $Tm^{3+}$, and $Yb^{3+}$) Doped $Y_2O_3$ Luminescent Ceramics by the Use of Reverse Micelles

**Harpreet Singh** — M.S. Metallurgical Engineering
Graduation Date: December 2004
Institution: University of Nevada, Reno
Thesis Title: Reverse Micelle Synthesis and Consolidation of Zirconia Nanopowders

**Shailaja Varma** — M.S. Metallurgical Engineering
Graduation Date: August 2004
Institution: University of Nevada, Reno
Thesis Title: Synthesis and Characterization of Nanostructured Ceramic Luminescent Materials

**THESIS COMMITTEE MEMBER**

**Tricia Light**, Ph.D. in Earth Sciences
Institution: University of California San Diego
Graduation Date: December 2023
Thesis Topic: Pelagic Barite Formation, Dissolution, and Preservation: Contextualizing a Marine Carbon Cycle Proxy

**Gottlieb Uahengo**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2023
Thesis Topic: Non-equilibrium Phase Fraction and Light Transmission in Polycrystalline Yttria Stabilized Zirconia Ceramics

**Javier Buenrostro**, Ph.D. in Structural Engineering
Institution: University of California San Diego
Graduation Date: December 2022
Thesis Topic: Characterization of the Response of Woven Composites and Additively Manufactured Metals Defects Under Intermediate Loading Rates

**William James McDonald Connacher**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: December 2022
Thesis Topic: Acoustofluidic Droplet Generation: Physical Understanding and Applications of Jetting and Atomization

**Joel Jimenez Rivera**, Ph.D. in Chemistry
Institution: University of California San Diego
Graduation Date: August 2022
Thesis Topic: Spectroscopic Studies of the Photoinduced Electron Transfer Reaction of Tryptophan in Azurin

**Veronica Eudave**, M.S. in Engineering Physics
Institution: University of California San Diego
Graduation Date: August 2022
Thesis Topic: Anode Shape and Structure Effects on Dense Plasma Focus Neutron Yield

**Joshua Stephan Pelz**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2022
Thesis Topic: Exploring Process-Structure-Property Relationships via Additive Manufacturing

**Elizabeth Marie Bullard**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2022
Thesis Topic: Eastern Pacific Bivalve Shell Calcification in a Warming and Acidifying Ocean

**Xingyu Guo**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2022
Thesis Topic: Computational Design of Novel Electrodes for Alkali-ion Batteries

**Paulina Diaz Montiel**, Ph.D. Engineering Sciences (Structural Engineering)
Institution: University of California San Diego / San Diego State University
Graduation Date: March 2022
Thesis Topic: The Effect of Waviness Defects on the Damage Mechanics of Fiber-Reinforced Composites Under Monotonic and Cyclic Loading

**Alex Jason Mantanona**, Ph.D. in Chemistry
Institution: University of California San Diego
Graduation Date: March 2022
Thesis Topic: Bridging the Gap Between Spectroscopic and Magnetic Measurements in Organocobalt Complexes

**Hui Zheng**, Ph.D. in NanoEngineering
Institution: University of California San Diego
Graduation Date: August 2021
Thesis Topic: Defect Effects on Mechanical Properties and Deformation Behavior of Materials: From Quantum Mechanics to Molecular Dynamics Assisted by Machine Learning

**Mahdi Amachraa**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2021
Thesis Topic: Theoretical Design and Discovery of Novel Inorganic Phosphors

**Audrey Velasco-Hogan**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2021
Thesis Topic: Exploring Structural Biological Materials and Their Structure-Property Relationships in Mineralized and Non-mineralized Systems

**Darren Michael Dewitt**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: March 2021
Thesis Topic: Nanoporous, Transparent, and Doped $MgAl_2O_4$ Spinel—Nanostructural Flexibility by Pressure-assisted Reaction Densification of Metastable Powders

**Xing Xing**, Ph.D. in Chemical Engineering
Institution: University of California San Diego
Graduation Date: December 2020
Thesis Topic: Novel Materials for Next Generation Lithium Batteries

**Andrew J. Wright**, Ph.D. in Chemical Engineering
Institution: University of California San Diego
Graduation Date: December 2020
Thesis Topic: Thermomechanical Properties of Medium- and High-entropy Oxides and Their Interaction with Molten Salts

**Mingde Qin**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: December 2020
Thesis Topic: Synthesis of Dual-phase High-entropy Ultrahigh Temperature Ceramics and Reactive Sintering of Boride-based High-entropy Ceramics

**Richard Tran**, Ph.D. in Nanoengineering
Institution: University of California San Diego
Graduation Date: December 2020
Thesis Topic: First Principles Modeling of Planar and Point Defects in Materials

**Hyeseung Chung**, Ph.D. in Nanoengineering
Institution: University of California San Diego
Graduation Date: August 2020
Thesis Topic: Influence of Synthetic Conditions for Nanoparticle Synthesis in Anionic and Cationic Redox Cathode Material

**Morgan E.C. Miller**, Ph.D. in Nanoengineering
Institution: University of California San Diego
Graduation Date: August 2020
Thesis Topic: Characterizing the Impact Dynamics of Small Particles: The Aerosol Impact Spectrometer

**Alyssa Jean Griffin**, Ph.D. in Oceanography
Institution: University of California San Diego
Graduation Date: June 2020
Thesis Topic: Biogenic Carbonate Dissolution in Shallow Marine Environments

**Jessica C. Moreton**, Ph.D. in Chemistry
Institution: University of California San Diego
Graduation Date: March 2020
Thesis Topic: Characterizing and Controlling the Interface of Metal-Organic Framework and Polymer Components in Mixed-Matrix Membranes

**Carlos Eduardo Martínez Núñez**, Ph.D. in Physics
Institution: Universidad de Sonora
Graduation Date: September 2019
Thesis Topic: Efecto SERS por Nanopartículas Semiconductoras en Zeolita Sintética F9 y Cloruro de Sodio

**Christopher Michael Coaty**, Ph.D. in NanoEngineering
Institution: University of California San Diego
Graduation Date: September 2019
Thesis Topic: Conversion Reaction Synthesis: A Versatile Synthesis Pathway to Nanoporous Metals

**Carlos Eduardo Martínez Núñez**, Ph.D. in Physics
Institution: Universidad de Sonora
Graduation Date: August 2019
Thesis Topic: Efecto SERS por Nanopartículas Semiconductoras en Zeolita Sintética F9 y Cloruro de Sodio

**James Paris Wampler**, Ph.D. in Physics
Institution: University of California San Diego
Graduation Date: August 2019
Thesis Topic: The Search for Novel Superconductivity in Inhomogeneous Materials using Magnetic Field Modulated Microwave Spectroscopy

**Joshua Gild**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: August 2019
Thesis Topic: Synthesis and Fabrication of High Entropy Diborides, Fluorite Oxides, and Silicides

**Pritesh Parikh**, Ph.D. in Nanoengineering
Institution: University of California San Diego
Graduation Date: August 2019
Thesis Topic: Exploring Nanoscale Chemical Distributions for Energy Applications Using Atom Probe Tomography

**Katharine G. Lunny**, Ph.D. in Chemistry
Institution: University of California San Diego
Graduation Date: August 2019
Thesis Topic: Investigation of Reactive Oxides and Radical Dynamics by Photoelectron-Photofragment Coincidence Spectroscopy

**Mahdi Amachraa**, M.S. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2019
Thesis Topic: A Universal Understanding of Thermal Quenching in $Eu^{2+}$ and $Ce^{3+}$-Doped Phosphors

**Jungmin Ha**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2019
Thesis Topic: Design and Synthesis of Phosphors to Improve Efficiency for Solid State Lighting Applications

**Jungwoo Lee**, Ph.D. in NanoEngineering
Institution: University of California San Diego
Graduation Date: August 2018
Thesis Topic: Advancing Focused Ion Beam Characterization for Next Generation Lithium-Ion Batteries

**Verónica Jazmín Huerta Guerra**, M.S. in Nanoscience
Institution: Centro de Investigación Científica y de Educación Superior de Ensenada
Graduation Date: June 2018
Thesis Topic: Recristalización de Nanocintas de Hidroxiapatita Inducida por Campos Eléctricos

**Zhenbin Wang**, Ph.D. in NanoEngineering
Institution: University of California San Diego
Graduation Date: March 2018
Thesis Topic: Design and Optimization of Phosphors for Solid-State Lighting using First-Principles Calculations

**Serdar Yavuz**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: March 2018
Thesis Topic: Graphene/Silicon Schottky Junction Based Solar Cell

**Joon Kyo Seo**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: December 2017
Thesis Topic: Electrochemical and Thermodynamic Study of Electrode Materials on Li-ion Batteries and Aqueous Energy Storage and Conversion Applications

**Kristine McGrath**, M.S. in Mechanical Engineering
Institution: University of California San Diego
Graduation Date: December 2016
Thesis Topic: Fabrication of Anodic Aluminum Oxide Membrane for High Heat Flux Evaporation

**Mohamad Ramzi Bin Abdul Majit**, M.S. in Engineering Science (Mechanical Engineering)
Institution: University of California San Diego
Graduation Date: August 2016
Thesis Topic: Laminate Manufacture of Self Assembled Curved Surfaces for Small Unmanned Aerial Vehicles (SUAVs)

**Hyojung Chloe Yoon**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: August 2016
Thesis Topic: Influence of Synthetics Conditions of Polyol Process on High Power High Energy Materials: Structural and Electrochemical Properties

**Dongwon Chun**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2016
Thesis Topic: Rare-earth Free Mn-based Magnetocaloric Alloys for Solid State Refrigeration

**Steven Naleway**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2016
Thesis Topic: Harnessing Biology for Bioinspired Structural Materials with Intrinsic and Extrinsic Freeze Casting

**Dalia Holanda Chávez García**, Ph.D. in Physics of Materials
Institution: Universidad Nacional Autónoma de México
Graduation Date: June 2016
Thesis Topic: Nanomateriales Luminiscentes como Bioetiquetadores de Células de Cáncer de Mama

**Tane Remington,** Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: December 2015
Thesis Topic: Extreme Response in Tension and Compression: Tantalum from Single to Nano Crystals

**Tze-Han Chen**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: December 2015
Thesis Topic: Developing "Lunar Cement" Using Raw Lunar Soils

**Luz Zavala Sanchez,** M.S. in Materials Science and Engineering
Institution: Universidad Nacional Autónoma de México
Graduation Date: December 2015
Thesis Topic: Luminescence Response of Doped Hydroxyapatite

**Gabriel Rojas-George**, Ph.D. in Materials Science and Engineering
Institution: Centro de Investigación en Materiales Avanzados
Graduation Date: May 2015
Thesis Topic: Nucleación y Crecimiento de Películas Delgadas de $BiFeO_3$ Dopadas con $Ba^{2+}$, $Co^{2+}$, y $Ni^{2+}$: Efecto Ferroeléctrico y Ferromagnético en Función del Grado de Distorsión R3c

**Daniel Rubio Saavedra**, M.S. in Chemical Sciences
Institution: Universidad Nacional Autónoma de México
Graduation Date: August 2015
Thesis Topic: Síntesis de Sistemas Binarios de Hexaboruros con Catalizadores Incorporados (R-B6:M) para el Almacenamiento de Hidrógeno

**Zhi Ming Chen**, Ph.D. in Structural Engineering
Institution: University of California San Diego
Graduation Date: June 2015
Thesis Topic: Experimental and Numerical Investigation of Wide Area Blunt Impact Damage to Composite Aircraft Structures

**Oscar E. Jaime-Acuña**, Ph.D. in Physics of Materials
Institution: Universidad Nacional Autónoma de México
Graduation Date: December 2014
Thesis Topic: Nanocompuestos Fotocatalíticos a Partir de Zeolitas Sintéticas

**Kevin Schmidt**, M.S. in Chemical Engineering
Institution: University of Nevada, Reno
Graduation Date: December 2014
Thesis Topic: Computational Modeling of Lanthanum Hexaboride Materials: Intermolecular Potentials and Molecular Dynamics

**Nuyeli del Carmen Izaguirre Espinoza**, M.S. in Physics of Materials
Institution: Universidad Nacional Autónoma de México
Graduation Date: December 2014
Thesis Topic: Nanopartículas Magnéticas/Luminiscentes para Detección y Tratamiento de Cáncer por Ablación Térmica

**Michael M. Porter**, Ph.D. in Materials Science and Engineering
Institution: University of California San Diego
Graduation Date: June 2014
Thesis Topic: Bioinspired Design: Magnetic Freeze Casting

**Victoria L. Blair**, Ph.D. in Ceramic Engineering
Institution: Alfred University
Graduation Date: May 2014
Thesis Topic: Engineering Methods for Improved Photocatalysis of Layered Perovskites

**Bu Wang**, Ph.D. in Ceramic Engineering
Institution: Alfred University
Graduation Date: May 2012
Thesis Topic: Computer Simulations of Large-scale Defect Clustering and Nano-domain Structure in Solid Oxide Fuel Cell Electrolytes

**Jeffrey Grover**, M.S. in Materials Science and Engineering
Institution: Alfred University
Graduation Date: December 2011
Thesis Topic: Thermoelectric Characterization of Beta-Gallia Rutile Intergrowths in the Semiconducting System: $(Ga_{0.75}In_{0.25})_4(Ti_ySn_{1-y})_5O_{16}$

**Britney Higgins**, M.S. in Materials Science and Engineering
Institution: Alfred University
Graduation Date: December 2010
Thesis Topic: Effects of Processing on Density and Microstructure on Trivalent Tungstates

**Daniel Dunn**, Ph.D. in Ceramic Engineering
Institution: Alfred University
Graduation Date: December 2010
Thesis Topic: The Effect of Fiber Volume Fraction in SiC-SiC Composites

**George Keith**, M.S. in Ceramic Engineering
Institution: Alfred University
Graduation Date: December 2009
Thesis Topic: Powder Synthesis and Device Fabrication of a Multi-Layered Solid State Light Emitting Material

**Cameron Hilton**, Ph.D. in Chemistry
Institution: University of Nevada, Reno
Graduation Date: August 2008
Thesis Topic: Biphenyl Complexes of Zirconium and Their Utility in the Synthesis of Polycyclic Aromatic Hydrocarbons

**Sivakumar Lanka**, Ph.D. in Electrical Engineering
Institution: University of Nevada, Reno
Graduation Date: August 2008
Thesis Topic: Bandwidth Efficient Modulation Techniques for Lightwave Systems

**Anjali Talekar**, Ph.D. in Materials Science and Engineering
Institution: University of Nevada, Reno
Graduation Date: August 2008
Thesis Topic: High-Temperature Oxidation Kinetics of Nickel-Based Superalloys and HSLA Steels in Pure Oxygen

**Suresh C. Divi**, Ph.D. in Metallurgical Engineering
Institution: University of Nevada, Reno
Graduation Date: May 2008
Thesis Topic: Electrochemical Study of Rock Bolts for Yucca Mountain (YM) Repository

**Adam Gardner**, M.S. in Chemical Engineering
Institution: University of Nevada, Reno
Graduation Date: May 2007
Thesis Topic: Molecular Dynamics of AOT/Water/Isooctante Reverse Micelles: Dynamics and Structural Analysis and Effect of Zirconium Ions on the Micellar Structure for $ZrO_2$ Nanparticle Production

**Alonso Jaques**, M.S. in Metallurgical Engineering
Institution: University of Nevada, Reno
Graduation Date: May 2007
Thesis Topic: Linear Multicomponent Diffusion in the Gamma Phase in the Ni-Cr-Mo System

**Charles Mebi**, Ph.D. in Chemistry
Institution: University of Nevada, Reno
Graduation Date: May 2007
Thesis Topic: Half-Sandwich Ruthenium(II) Complexes of 1,3,5-Triaza-7-Phosphaadamantane: Syntheses, Reactivity, and Catalytic Applications

**Nestor Perea**, Ph.D. in Physics of Materials
Institution: Universidad Nacional Autónoma de México
Graduation Date: June 2006
Thesis Topic: Physical and Chemical Properties of $Sr_2CeO_4$ and its Possible Applications in Luminescent Devices

**Suresh C. Divi**, M.S. in Metallurgical Engineering
Institution: University of Nevada, Reno
Graduation Date: December 2005
Thesis Topic: Heat Capacities Measurement of Pure and Binary Organic Thermal Energy Storage Materials

**Ravikant Samathan**, M.S. in Mechanical Engineering
Institution: University of Nevada, Reno
Graduation Date: December 2004
Thesis Topic: Sub-Micron Diameter Electrospun Polyacrylonitrile Fibers as Potential Linear Actuators

### CURRENT UNDERGRADUATE STUDENTS

**Irving Ding**, B.S. Mechanical Engineering, University of California San Diego, February 2025 – present

**Marc Levy**, B.S. Nanoengineering, University of California San Diego, February 2025 – present

**Jesús Héctor Pérez González**, B.S. Aerospace Engineering, Universidad Nacional Autónoma de México, November 2024 – present

**Zachary Shelton**, B.S. Mechanical Engineering, University of California San Diego, October 2024 – present

**Liliana Becerril Tapia**, B.S. Energy Engineering, Instituto Politécnico Nacional, October 2024 – present (REU student)

**Gerardo Mercado Hurtado**, B.S. Computer Systems Engineering, Instituto Tecnológico del Sur de Guanajuato, October 2024 – present (REU student)

**Emilio Jared Espinosa Cruz**, B.S. Artificial Intelligence, Instituto Politécnico Nacional, October 2024 – present (REU student)

**Eduardo Jiménez Miranda**, B.S. Energy Engineering, Instituto Politécnico Nacional, April 2024 – present (REU student)

**Edgar Solano Castrejón**, B.S. Energy Engineering & Physics, Instituto Politécnico Nacional, April 2024 – present (REU student)

**Marshall Hamon**, B.S. Mechanical Engineering, University of California San Diego, September 2024 – present

**Uzziel Jacob Salas Carreto**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, January – June 2024; September 2024 – present (REU student)

**Marcus Velasquez**, B.S. Aerospace Engineering, University of California San Diego, October 2023 – present

**Zoey He**, B.S. Data Science, University of California San Diego, October 2023 – present

**Nicolas Stacy-alcantara**, B.S. Aerospace Engineering, University of California San Diego, September 2023 – present

**Helin Henstridge**, B.S. Biophysics, University of California San Diego, September 2023 – June 2024; February 2025 – present

**FORMER UNDERGRADUATE STUDENTS**

**Madeline Rivas Vergara**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, September 2024 – January 2025 (REU student)

**Jorge Alberto Bustos Zamora**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, September 2024 – January 2025 (REU student)

**Marshall Nakada**, B.S. Mechanical Engineering, University of California San Diego, March – June 2024; September 2024 – January 2025

**Valeria Arroyo Fernandez**, B.S. Chemistry, Universidad de Guadalajara; June – August 2024 (REU student)

**Diana Escárrega Carrillo**, B.S. Biotechnology, Instituto Tecnológico y de Estudios Superiores de Occidente; June – August 2024 (REU student)

**Heriberto Campa Ortega**, B.S. Chemistry, Universidad de Sonora; June – August 2024 (REU student)

**Gustavo Peña Burboa**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, February – June 2024 (REU student)

**Helin Henstridge**, B.S. Biophysics, University of California San Diego, September 2023 – June 2024

**José Arturo García Cortés**, B.S. Nanotechnology Engineering, Universidad Autónoma del Estado de Hidalgo, January – May 2024 (REU student)

**Natalia Muñoz**, B.S. Chemical Engineering, University of California San Diego; April 2023 – June 2024

**Michael Usherenko**, B.S. Mechanical Engineering, University of California San Diego; December 2022 – June 2023; September 2023 – June 2024

**Luis Angel Rojas Mercado**, B.S. Mechanical Engineering, Tecnológico Nacional de México–Campus Celaya; August 2022 – June 2024 (REU student)

**Igli Alivoda**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – June 2024

**Justin Nakamura**, B.S. NanoEngineering, University of California San Diego; April 2022 – May 2024

**Lidia Vazquez**, B.S. Bioengineering, University of California San Diego; January 2022 – June 2024

**Kuvam Bhatnagar**, B.S. Chemical Engineering, University of California San Diego, May 2023 – May 2024

**Clayton Ng**, B.S. Chemical Engineering, University of California San Diego; March 2023 – March 2024

**Melquizedek Rebolledo**, B.S. Mechanical Engineering, University of California San Diego; August 2020 – June 2021; September 2021 – June 2024

**Christian Ulises Ramos Linares**, B.S. Biochemical Engineering, Instituto Tecnológico Superior de Irapuato, June 2021 – January 2024 (REU student)

**John Leitch**, B.S. Aerospace Engineering, University of California San Diego, June 2023 – January 2024

**Summer Lindauer**, B.S. Undeclared, University of California San Diego, October 2023 – January 2024

**Kathleen Le**, B.S. Structural Engineering, University of California San Diego, October – December 2023

**Noel Sebastien Mallari**, B.S. Nanoengineering, University of California San Diego, September – November 2023

**Tommy Jin**, B.S. Mechanical Engineering, University of California San Diego; September 2022 – November 2023

**Chaewon Kim**, B.S. Mechanical Engineering, University of California San Diego; September 2022 – October 2023

**Paulina Ivonne Cortés Díaz**, B.S. Mechatronics Engineering, Instituto Tecnológico y de Estudios Superiores de Monterrey, June 2021 – January 2023; May – October 2023 (REU student)

**Moisés Humberto Ibarra Miranda**, B.S. Nanotechnology, Instituto Tecnológico y de Estudios Superiores de Monterrey; August 2022 – September 2023 (REU student)

**Julia Lee**, B.S. Mechanical Engineering, University of California San Diego; March – August 2023

**Vanessa Corona**, B.S. Chemistry, Universidad Autónoma de Baja California; Summer 2023 (REU student)

**Andres Cortes Nowack** B.S. Chemical Engineering, Universidad Nacional Autónoma de México; Summer 2023 (REU student)

**Yau Ching (Oscar) Yun**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – June 2023

**Yujie Zhou**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – June 2023

**Chen (Derek) Liu**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – June 2023

**Jarren Ayars**, B.S. Chemical Engineering, University of California San Diego; March – June 2023

**Daniel Acosta**, B.S. Mechanical Engineering, University of California San Diego; May 2022 – June 2023

**Marfred Barrera**, B.S. Mechanical Engineering, University of California San Diego; September 2022 – June 2023

**Omar Antonio Perez**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – June 2023

**Emma Fickett**, B.S. Mechanical Engineering, University of California San Diego; January – June 2023

**Peter Thien Lai**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – May 2023

**Eason Lai**, B.S. Mechanical Engineering, University of California San Diego; April – June 2023; September 2022 – June 2023

**Brandon G. Char**, B.S. Mechanical Engineering, University of California San Diego; April 2022 – April 2023

**Hailey Griffith**, B.S. Mechanical Engineering, University of California San Diego; January – April 2023

**Brian Fader**, B.S. Mechanical Engineering, University of California San Diego; January 2023 – March 2023

**Yuhang Huang**, B.S. Mechanical Engineering, University of California San Diego; September 2022 – February 2023

**Alex Li**, B.S. Mechanical Engineering, University of California San Diego; January 2022 – June 2022; September 2022 – January 2023

**Jason Liu**, B.S. Mechanical Engineering, University of California San Diego; June 2022 – January 2023

**Matthew Callahan**, B.S. Mechanical Engineering, University of California San Diego; June 2022 – December 2023

**Yaqueline Beltrán Rojo**, B.S. Nanotechnology, Universidad Politécnica de Sinaloa; September – December 2022 (REU student)

**Sankalp Kaushik**, B.S. Mechanical Engineering, University of California San Diego; January 2022 – June 2022

**Anannaya Vij**, B.S. Mechanical Engineering, University of California San Diego; April – June 2022

**Eesa Khan**, B.S. Mechanical Engineering, University of California San Diego; January – August 2022

**Eddy Rodas-Lima**, B.S. Mechanical Engineering, University of California San Diego; October 2021 – August 2022

**Jason Rodriguez**, B.S. Mechanical Engineering, University of California San Diego; January – July 2022

**Juan Pablo Sánchez Cabrera**, B.S. Medicine, Universidad Autónoma de Baja California; Summer 2022 (REU student)

**Aditya Shah**, B.S. Mechanical Engineering, University of California San Diego; April – June 2022

**Manuel Abitia-León**, B.S. Mechanical Engineering, University of California San Diego; January 2022 – June 2022

**Rafael Chavez**, B.S. Mathematics—Applied Science, University of California San Diego; January – June 2022

**Manuel Albarran**, B.S. Chemical Engineering, University of California San Diego; January 2021 – May 2022

**Claudia Vanessa Dorantes Villegas**, B.S. Mechatronics Engineering, Instituto Tecnológico y de Estudios Superiores de Monterrey, June 2021 – May 2022 (REU student)

**Ali Kattee**, B.S. Mechanical Engineering, University of California San Diego; October 2021 – June 2022

**Katada Siraj**, B.S. Mechanical Engineering, University of California San Diego, September 2021 – June 2022

**Reina Gomez**, B.S. Nanoengineering, University of California San Diego, September 2021 – June 2022

**Jixuan Dong**, B.S. Nanoengineering, University of California San Diego, September 2021 – May 2022

**Anna Wilke**, B.S. Biological Sciences, University of California San Diego; June 2020 – May 2022

**Paul Barraza**, B.S. Mechanical Engineering, University of California San Diego; January 2020 – May 2022

**Dayana Sandoval Orozco**, B.S. Medicine, Universidad Autónoma de Baja California, June 2021 – April 2022 (REU student)

**Jamie Doan**, B.S. Mechanical Engineering, University of California San Diego, September 2021 – April 2022

**Bryan Daniel Sandoval Gaytán**, B.S. Mechatronics Engineering, CETyS Universidad, August 2019 – December 2021 (REU student)

**Sergio Ojeda**, B.S. Nanoengineering, Instituto Tecnológico de Tijuana, June – December 2021 (REU student)

**Kylan Zhao**, B.S. Mechanical Engineering, University of California San Diego; January 2021 – January 2022

**Andrea Estrada**, B.S. Bioengineering, Instituto Politécnico Nacional, June – December 2021 (REU student)

**Zachary Cadieux**, B.S. Mechanical Engineering, University of California San Diego, March – November 2021)

**Jessica Munoz**, B.S. Mechanical Engineering, San Diego State University, June – September 2021 (REU student)

**Jackson Wilke**, B.S. Biophysics, Mesa College, June – September 2021 (REU student)

**Cassandra Gamino**, B.S. Biology, University of California, Riverside, June – September 2021 (REU student)

**Aaron Tenner**, B.S. Aerospace Engineering, San Diego State University, June – September 2021 (REU student)

**Gerardo Ontiveros-Cortes**, B.S. Chemistry, University of California San Diego; August 2020 – August 2021

**Jorge Macias Gómez**, B.S. Computer Science, Universidad Nacional Autónoma de México, Summer 2021 (REU student)

**Ashlee Graciano Escobedo**, B.S. Environmental Engineering, Instituto Politécnico Nacional, Summer 2021 (REU student)

**Andrea Abascal Molina**, B.S. Mechatronic Engineering, Instituto Tecnológico y de Estudios Superiores de Monterrey, Summer 2021 (REU student)

**Jonatan Emanuel Salinas Avila**, B.S. Digital Systems and Robotics Engineering, Instituto Tecnológico y de Estudios Superiores de Monterrey, Summer 2021 (REU student)

**Karla León Zúñiga**, B.S. Nanotechnology, Universidad Tecnológica de Querétaro, Summer 2021 (REU student)

**Antonio César Doñez Miranda**, B.S. Chemistry, Universidad Nacional Autónoma de México, Summer 2021 (REU student)

**Luyao Zhang**, B.S. Mechanical Engineering, University of California San Diego; June 2019 – June 2021

**Jimmy Do**, B.S. Mechanical Engineering, University of California San Diego; August 2020 – June 2021

**Isabella Aureguy**, B.S. Chemical Engineering, University of California San Diego; February 2021 – June 2021

**Vanessa Gonzalez Núñez**, B.S. Aeronautical Engineering, Instituto Tecnológico de Tijuana; October 2019 – April 2021 (REU student)

**Hugo Sevilla Gómez Llanos**, B.S. Computer Science and Engineering, CETyS Universidad; August 2019 – February 2021 (REU student)

**Raúl Rosas**, B.S. Biochemical Engineering, Instituto Politécnico Nacional; August 2019 – October 2020 (REU student)

**Paola Castro Flores**, B.S. Biochemical Engineering, Instituto Politécnico Nacional; August 2019 – October 2020 (REU student)

**Dominic Nightingale**, B.S. Mechanical Engineering, University of California San Diego; January 2020 – June 2020

**Felix Monge**, B.S. NanoEngineering, University of California San Diego; January 2018 – June 2020

**Jennifer Coates**, B.S. Mechanical Engineering, University of California San Diego; September 2019 – June 2020

**Christopher Bagon**, B.S. NanoEngineering, University of California San Diego; September 2018 – March 2020

**Mingcong Tang**, B.S. Mechanical Engineering, University of California San Diego; June 2019 – March 2020

**Barry Cheung**, B.S. Mechanical Engineering, University of California San Diego; January 2019 – January 2020

**Jesus Canizales**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, Summer 2019 (REU student)

**María Fernanda Rodriguez**, B.S. Materials Engineering, Instituto Tecnológico de Tijuana, Summer 2019 (REU student)

**Tareq Labeeb**, Cypress College, Summer 2019 (REU student)

**Natalie Lam**, B.S. NanoEngineering, University of California San Diego; January 2019 – June 2019

**Sergio Sufy**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, September 2018 – June 2019 (REU student)

**Jorge Ontiveros**, B.S. NanoEngineering, Instituto Tecnológico de Tijuana, September 2018 – January 2019 (REU student)

**Hector Marin-Alcantar**, B.S. Aerospace Engineering, University of California San Diego; September 2018 – June 2019

**Natasha Lee**, B.S. Mechanical Engineering, University of California San Diego; April 2017 – September 2018

**Carmen Nayeli Guzmán**, B.S. Chemical Engineering, University of California San Diego; July 2018 – September 2018

**Carlos Andrés Calderón**, Mt. Saint Jacinto Community College, Summer 2018 (REU student)

**Erick Alvarado**, B.S. NanoEngineering, University of California San Diego, Summer 2018

**Aric Bandera**, B.S. Aerospace Engineering, Universidad Autonoma de Baja California, August 2017 – July 2018 (REU student)

**Jayna Wittenbrink**, B.S. Mechanical Engineering, University of California San Diego; April 2018 – June 2018

**Diego Miranda**, B.S. Aerospace Engineering, University of California San Diego; March 2016 – December 2017

**Jason Mayeda**, B.S. Mechanical Engineering, University of California San Diego; September 2016 – August 2017

**Veronica Sanchez**, B.S. Chemical Engineering, University of California San Diego; Summer 2017

**Ivan Cuellar**, B.A. Business Administration, Centro de Estudios Univ. "16 de Septiembre", Summer 2017 (REU student)

**Richard Aranda**, B.S. Aerospace Engineering, Universidad Autónoma de Baja California, Summer 2017 (REU student)

**Sebastian Lee**, B.S. Mechanical Engineering, University of California San Diego; Fall 2016 – Spring 2017

**Danijel Plazonic**, B.S. Nanoengineering, University of California San Diego; Winter 2016 – Spring 2017

**Ved Vakharia**, B.S. Mechanical Engineering, University of California San Diego; Winter 2015 – Winter 2017

**Luisa Rosa-Silva**, B.S. Physics, University of California San Diego; Spring 2016; Fall 2016

**Jordan T. Furlong**, B.S. Nanoengineering, University of California San Diego; Fall 2015 – Summer 2016

**Alan Alvarez**, B.S. Bioengineering, Universidad Autónoma de Baja California, Summer 2016 (REU student)

**Brianna Fernandez**, B.S. Mechatronic Engineering, CETyS Universidad, Summer 2016 (REU student)

**Victoria Stanley**, B.S. Nanoengineering, University of California San Diego; Fall 2014 – Spring 2016

**Walter Garay**, B.S. Physics, University of California San Diego; Fall 2015 – Spring 2016

**Ernesto de la Paz**, B.S. Nanotechnology, Instituto Tecnológico de Tijuana (REU student)

**Jiayue Yu**, B.S. Chemical Engineering, University of California San Diego; Winter 2015 – Spring 2015

**Lauren Lopez**, B.S. Chemical Engineering, University of California San Diego; Winter 2015 – Summer 2015

**Alejandro Cota**, B.S. Mechanical Engineering, University of California, Berkeley, Summer 2015 (REU student)

**Christopher Pisano**, B.S. Chemical Engineering, University of Illinois, Urbana-Champaign, Summer 2015 (REU student)

**Carson Cheung**, B.S. Mechanical Engineering, University of California San Diego; Fall 2013 – Winter 2015

**César J. Villa**, B.S. Mechanical Engineering, University of California San Diego; Spring 2013 – Spring 2015

**Joel Bahena**, B.S. Nanoengineering, University of California San Diego; Spring 2013 – Spring 2015

**Rocio Pena**, B.S. Chemical Engineering, University of California San Diego; Spring 2013 – Spring 2015

**Aaron Manheim**, B.S. Mechanical Engineering, University of California San Diego; Summer 2014 – Spring 2015

**Grecia Pena**, B.S. Nanoengineering, University of California San Diego; Summer 2014 – Fall 2014

**Alvin Chak**, B.S. Mechanical Engineering, University of California San Diego; Spring 2014

**Jaime Regis**, B.S. Mechanical Engineering, University of California San Diego; Winter 2014 – Spring 2014

**Alicia Zörner**, B.S. Nanotechnology, Friedrich-Alexander-Univeristät Erlangen- Nürnberg, Spring 2014 – Summer 2014 (REU student)

**Benjamin Rangel**, B.A. Spanish, Colgate University, Summer 2014 (REU student)

**Veronika Albert**, B.S. Nanotechnology, Friedrich-Alexander-Univeristät Erlangen- Nürnberg, Spring 2014 – Summer 2014 (REU student)

**Seth M. Fuller**, B.S. Ceramic Engineering, Alfred University
Graduation Date: May 2014
Senior Thesis: Diffusion Study of Barium, Strontium, and Calcium Metal Ion Hexaborides

**Janelle Duenas**, B.S. Computer Science and Engineering, University of California San Diego; Spring 2013 – Fall 2014

**Paulo J. Colmenares**, B.S. Materials Science and Engineering, Alfred University
Graduation Date: December 2013
Senior Thesis: Consolidation and Devitrification Behavior of Iron-Based Alloys for Ballistic Applications

**Lewis H. Fowler-Gerace**, B.S. Physics, Wesleyan University (REU student); Summer 2013

**Brittany A. Caldwell**, B.S. Ceramic Engineering, Alfred University
Graduation Date: December 2012
Senior Thesis: Chemical Treatments of Magnesium Diboride Powder to Manipulate Particle Size

**Braeden M. Clark**, B.S. Glass Engineering Science, Alfred University
Graduation Date: May 2012
Senior Thesis: Chemical Treatments of Tantalum Carbide Powder to Manipulate Morphology, Particle Size, and Oxygen Content

**Michael Alberga**, B.S. Materials Science and Engineering, Alfred University
Graduation Date: May 2012
Senior Thesis: Combustion Synthesis of Doped and Undoped Titania Nanopowders for Use in SOFC and Thermoelectric Applications

**Daniel W. Davies**, B.S. Materials Science and Engineering, Alfred University
Graduation Date: May 2012
Senior Thesis: Unique Preparation of Boron Nitride for Ultra High Hardness Applications

**Kali A. Lambert**, B.S. Materials Science and Engineering, Alfred University
Graduation Date: May 2012
Senior Thesis: The Effects of Silica on the Fabrication of Translucent Polycrystalline Lutetium Orthosilicate for $\gamma$-Ray Detection

**Kenneth E. Noll**, B.S. Materials Science and Engineering, Alfred University
Graduation Date: May 2012
Senior Thesis: Characterization of Sintered Zinc Oxide from Combustion and Precipitation Synthesis

**Ryan J. Grohsmeyer**, B.S. Materials Science and Engineering, Alfred University
Graduation Date: May 2012
Senior Thesis: Characterization of Thermal, Electrical, Microstructural and Mechanical Properties of Tantalum Carbide

**Patrick DiCesare**, B.S. Ceramic Engineering, Alfred University
Graduation Date: May 2010
Senior Thesis: Spark Plasma Sintering of Highly Corrosion-Resistant Amorphous Metal/Ceramic Composites

**Andrew D. Galens**, B.S. Ceramic Engineering, Alfred University
Graduation Date: May 2010
Senior Thesis: The Synthesis and Characterization of $EuB_6$ Nanopowders

**Colby M. Brunet**, B.S. Ceramic Engineering, Alfred University
Graduation Date: December 2009
Senior Thesis: Synthesis of Nanocrystalline Tantalum Powders

**Katelyn C. Glass**, B.S. Ceramic Engineering, Alfred University
Graduation Date: December 2009
Senior Thesis: A Comparative Analysis of Particle Size and Crystallite Size in Alumina Nanopowders Prepared by Reverse Micelle Synthesis

**Alexander W. Turner**, B.S. Materials Science and Engineering, Alfred University

**Hunter F. Haddad**, B.S. Biomedical Materials Engineering, Alfred University

**Robert J. Locker**, B.S. Materials Science and Engineering, Alfred University

**Kasey L. Hanson**, B.S. Ceramic Engineering

**Sarai Escalante**, B.S. Chemistry, Southwestern College (REU student)

**Gabriel Rojas-George**, B.S. Materials Science and Engineering, University of Nevada, Reno

**Brandon Williams**, B.S. Materials Science and Engineering, University of Nevada, Reno

**Karla Hernandez**, B.S. Biochemistry, University of Nevada, Reno

**Michael Saterlie,** B.S. Materials Science and Engineering, University of Nevada, Reno

**Linda Murillo**, B.S. Mechanical Engineering, University of Nevada, Reno

**Brett Pearson**, B.S. Materials Science and Engineering, University of Nevada, Reno

**Yon Sohn**, B.S. Materials Science and Engineering, University of Nevada, Reno

**Matthew Goodale**, B.S. Materials Science and Engineering, University of Nevada, Reno

**Daniel Peterson,** B.S. Materials Science and Engineering, University of Nevada, Reno

**Adriana Velasquez**, B.S. Electrical Engineering, University of Nevada, Reno

**Michelle McChesney**, B.S. Materials Engineering, San Jose State University
Graduation Date: May 2002
Senior Thesis: Modeling Solution for Electric Field-Activated Combustion Synthesis

**FORMER HIGH SCHOOL STUDENTS**

**Héctor Rubén González Casas**, Colegio La Paz, Summer 2024

**Sofia Sotres Garcia**, Prepa Tecnológico de Monterrey, Summer 2023

**Alondra Pinales**, Centro de Estudios Científicos y Tecnológicos (CECyT 18) N° 18 "Zacatecas", Summer 2023

**Mylo Martin**, Canyon Crest Academy, Summer 2023

**Erick Blanco Nakashima**, Prepa CETyS, Summer 2022

**Frida Xcaret Vargas Trejo**, Prepa Tecnológico de Monterrey, Summer 2022

**Liliana Stephania Perales Rodríguez**, Prepa Tecnológico de Monterrey, Summer 2022

**Luisa Fernanda Gastélum Hernández**, Colegio de Bachilleres del Estado de Sonora, Summer 2021

**Jackson Wilke**, San Diego MET High School, September 2019 – June 2020; April – June 2021

**Ryan Daniel Ramírez**, Dana Hills High School, Summer 2018

**Delphinia Senske**, San Diego MET High School, September 2017 – May 2018

**Alexander Kritsuk**, La Jolla High School, January 2016 – October 2017

**Erika Garza**, CETyS Bachillerato, Summer 2017

**Mauricio Guillen**, Southwest High School, Summer 2017

**Yamil Martinez**, La Paz High School, Summer 2017

**Jose Reynoso**, High Tech High, Summer 2017

**Sara Sabhan**, San Diego MET High School, September 2016 – June 2017

**Viviana Oliveros**, St. Rose of Lima School, November 2016 – January 2017

**Kira Cummings**, San Diego MET High School, September 2015 – August 2016

**Benjamin Snoreck**, Andover School, Summer 2015

**Andrea Salas**, La Paz High School, Summer 2015

**Fernanda Arce**, La Paz High School, Summer 2015

**Martha Olivieri**, Instituto Cumbres, Summer 2015

**Frida Durazo**, San Diego MET High School, June 2014 – August 2015

**Cruz Galarza**, Southwest High School, Summer 2014

**Dariana Arciniega**, Southwest High School, Summer 2014

**Hector Arias**, San Diego Early Middle College, Summer 2014

**Madeleine Morales**, Bishops High School, Summer 2014

**Paulina Stone**, La Paz High School, Summer 2014

**Erick Duran**, La Paz High School, Summer 2014

**Valeria Macias**, La Paz High School, Summer 2014

**Daniel Coronado**, Santa Ana High School, Summer 2013

**Paulina Ramirez**, La Paz High School, Summer 2013

**Rosella Parra**, La Paz High School, Summer 2013

**Gerardo Marquillo**, Sweetwater High School, Fall 2013

**Andrew King**, Canisteo High School, Summer 2011

**Odalis Reynaga**, Wooster High School, Spring 2007

**Issa Beekun**, Reed High School, Fall 2006

**Carlos Hernandez**, Reed High School, Fall 2006

**Tyler Aas**, Reno High School, Spring 2006

**Nazrul Mojumder**, Reno High School, Fall 2005

**Anna Carr**, Wooster High School, Spring 2004

**Brent Server**, Carson City High School, Spring 2003

## INVITED PRESENTATIONS

- **Keynote Lecture:** "Synthesis, Crystallography and Properties of Materials for Extreme Environments," Symposium of Nanoscience and Nanomaterials 2024 (Ensenada, México. Date: May 13-17, 2024).
- "Materials Aeroespaciales para Aplicaciones Terrestres y Extraterrestres," Segundo Congreso Estatal de Ciencia e Ingeniería en Materiales (Date: April 22-24, 2024).
- **Plenary Lecture:** "Materials for Extreme (and Space) Environments: Crystallography and Properties," 2024 Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (Panama City, Panama. Date: April 7-11, 2024).
- "Building Compassion and Human Bridges Through Research Collaborations," 2024 Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (Panama City, Panama. Date: April 7-11, 2024).
- "Materiales Aeroespaciales para Aplicaciones Terrestres y Extraterrestres," Reunión Interinstitucional Para la Divulgación de la Ciencia en Materiales (Date: March 22, 2024).
- "Estableciendo Puentes de Colaboración entre la Juventud de México y Estados Unidos: El Programa de Verano de Investigación ENLACE," Martes de la Academia de Ingenieria de México (Date: December 5, 2023).

- "Building Compassion and Human Bridges Through Research Collaborations," 2023 Annual MRSEC Education Directors Meeting (La Jolla, CA. Date: November 13, 2023).
- **Keynote Lecture:** "Building Compassion and Human Bridges Through Research Collaborations," 2023 Career Pathways Conference (San Diego, CA. Date: October 12, 2023).
- "Crystallography, Phase Stability and Luminescence Behavior of Eu-doped $Ca_{4-x}Sr_xLaO(BO_3)_3$ Compounds," Materials Science and Technology Technical Meeting and Exhibition (Columbus, OH. Date: October 1-4, 2023).
- "Processing of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature, Irradiation Resistant Ceramics," Materials Science and Technology Technical Meeting and Exhibition (Columbus, OH. Date: October 1-4, 2023).
- "Copper Oxide Nanoparticles as a Metal Ion Source for Enhanced Catalytic Stability of Laccase," Materials Science and Technology Technical Meeting and Exhibition (Columbus, OH. Date: October 1-4, 2023).
- "Transition Metals as Unique Modifiers for the Control of Morphology in Ultra-high Temperature Ceramics," 31st International Materials Research Congress (Cancún, México. Date: August 14-19, 2023).
- "Crystallography, Phase Stability and Luminescence Behavior of Eu-doped $Ca_{4-x}Sr_xLaO(BO_3)_3$ Compounds," 31st International Materials Research Congress (Cancún, México. Date: August 14-19, 2023).
- "Reflections on the Challenges, Opportunities, Resources and Best Practices Regarding International Education in Mexico and Latin America," HACU International Symposium (Guadalaraja, México. Date: June 23, 2023).
- **Plenary Lecture:** "Materiales en Ambientes Extremos: Diseño y Aplicaciones Extraterrestres," IX Congreso Internacional de Investigación Tijuana (Tijuana, México. Date: April 26-28, 2023).
- "Synthesis and Crystallography of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature and Irradiation Resistant Ceramics," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- **Keynote Lecture:** "Materiales en Ambientes Extremos: Diseño y Aplicaciones Extraterrestres," Semana Tecnológica 2022 (Aguascalientes, México. Date: October 26, 2022).
- "Materials for Space Environments: Extremes of Temperature, Pressure and Radiation," International Workshop on Advanced Engineering Materials (Panama City, Panama. Date: October 25, 2022).
- **Plenary Lecture:** "ENLACE 2023: Una Experiencia de Investigación Excepcional," VIII International Engineering, Science and Technology Conference (Panama City, Panama. Date: October 21, 2022).
- "Building Compassion and Human Bridges Through Research Collaborations," MS&T22 Technical Meeting and Exhibition (Pittsburgh, PA. Date: October 9-12, 2022).
- **Plenary Lecture:** "Materials for Space Environments: Extremes of Temperature, Pressure and Radiation," MSE Congress 2022 (Darmstadt, Germany. Date: September 4-9, 2022).
- "Supercompatibility in Ceramic Micropillars of $LaNbO_4$," XXX International Materials Research Congress (Cancún, México. Date: August 14-19, 2022).
- "Eu-doped $Ca_{4-x}Sr_xLaO(BO_3)_3$ Compounds for Efficient White-light Illumination," XXX International Materials Research Congress (Cancún, México. Date: August 14-19, 2022).
- "Supercompatibility in Ceramic Micropillars of $LaNbO_4$," Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (Panama City, Panama. Date: July 26, 2022).

- "Bi-national Education:  Challenges and Opportunities," Cumbre de la Ingeniería Panamericana (Mexico City, México.  Date:  June 10, 2022).
- "Morphologically Controlled Composites: Emerging Materials for Extreme Environments," Virtual Conference: Materials in the Anthropocene (Date:  October 27-29, 2021).
- "Materials for Space Environments: What Will it Take to Colonize Other Planets?," II Meeting of the Nanoscience Division of the Mexican Physics Society (Date:  October 25, 2021).
- **Plenary Lecture:** "Materiales Aeroespaciales para Aplicaciones Terrestres y Extraterrestres," Congreso Multidisciplinario 2021, Instituto Tecnológico de Zacapoaxtla (Date:  October 21, 2021).
- "Nanomateriales en Ambientes Extremos: Diseño y Aplicaciones Extraterrestres," LXVI Congreso Nacional de Física de la Sociedad Mexicana de Física (Date:  October 3-8, 2021).
- "Materials in Space: What is Needed to Colonize Other Planets?," International Workshop of the Research Unit FOR 3010 (Date:  September 27-28, 2021).
- "Hall-Petch Effect in Binary and Ternary Alumina / Zirconia / Spinel Composites," XXIX International Materials Research Congress (Date:  August 15-20, 2021).
- "Fabrication of Continuous Linear Pores in an SOFC Anode Using Unidirectional Carbon Fibers as Sacrificial Templates," XXIX International Materials Research Congress (Date:  August 15-20, 2021).
- **Plenary Lecture:** "Materiales Aeroespaciales: Para Aplicaciones Terrestres y Extraterrestres," VII Congreso Internacional de Investigación Tijuana (Date:  May 12, 2021).
- **Plenary Lecture:** "Materials in Space . . . What is Needed to Colonize Other Planets?," IX Simposio Anual de Estudiantes Asociados a la Ciencia e Ingeniería de Materials [9th Annual Symposium of Students in Materials Science & Engineering] (Date:  May 5, 2021).
- **Keynote Lecture:** "El Capital Humano en Ingeniería en la Industria Nacional de la Nueva Modernidad," Congreso Internacional de Ingeniería y Políticas Públicas (Date:  November 23-25, 2020).
- **Keynote Lecture:** "La Vinculación Como Eje Rector Para Formar Alianzas Con Actores Estratégicos," Congreso Colegiado Para el Intercambio de Experiencias con Directivos Para la Creación de Una Comunidad Virtual de Aprendizaje Profesional en Educación Secundaria (Date:  October 28, 2020).
- "Morphologically Controlled Composites: Emerging Materials for Extreme Environments," III National Workshop on Spark Plasma Sintering (Kraków, Poland.  Date:  October 23, 2020).
- **Keynote Lecture:** "Oportunidades Binacionales: El Docente como Difusor de Programas de Investigación," Congreso Colegiado para el Intercambio de Experiencias con Docentes para la Creación de una Comunidad Virtual de Aprendizaje Profesional en Educación Secundaria (Date:  October 21, 2020).
- "Materials for Space Environments: What Will It Take To Colonize Other Planets?," XIII International Conference on Surface Materials and Vacuum (Date:  October 19-23, 2020).
- "Emprendimiento Para Futuras Mujeres Ingenieras," 7ma Edición del Programa de Capacitación para Emprendedores, Instituto Politécnico Nacional (Date:  October 9, 2020).
- "Control de Morfología y Superficies en Materiales Cerámicos: Fundamentos y Aplicaciones," XLV Semana de Química Internacional (Chihuahua, México.  Date:  October 5-9, 2020).
- "A Precise DSC-based Methodology to Pinpoint *In Situ* Crystallinity Percent in Amorphous Systems," TMS 149th Annual Meeting & Exhibition (San Diego, CA.  Date:  February 23-27, 2020).
- "Smart Ceramics and Their Applications," IV Semana Académica, Instituto Tecnológico de Tijuana (Tijuana, México.  Date:  November 6, 2019).

- "Morphologically Controlled Composites: Emerging Materials for Extreme Environments," Cabo Talks (Los Cabos, México. Date: September 5-8, 2019).
- "Superelastic Response and Shape Memory Behavior in Niobate Materials," XXVIII International Materials Research Congress (Cancún, México. Date: August 18-23, 2019).
- "The UC-Mexico Initiative," XXVIII International Materials Research Congress (Cancún, México. Date: August 18-23, 2019).
- "Fuentes de Poder en Estado Sólido Para Dispositivos Biomédicos Miniatura: Ultimos Resultados y Estado de la Industria," MedSummit '19 (Rosarito, México. Date: August 7, 2019).
- "Morphologically Controlled Composites: Emerging Materials for Extreme Environments," High Temperature Ceramics for Extreme Environments Workshop (Columbus, OH. Date: June 18-19, 2019).
- "Materials in Space . . . What is Needed to Colonize Other Planets," 2nd CaliBaja Symposium and Workshop (La Jolla, CA. Date: May 3, 2019).
- "Design of Novel Corrosion Resistant Materials: An Emerging Technology for Extreme Environments," XI Simposion Internacional Investigación Química en la Frontera (Tijuana, México. Date: November 14, 2018).
- "The CaliBaja Education Consortium," 2018 International Research Conference (Davis, CA. Date: September 17-18, 2018).
- "Designing the Structure and Properties of Ultra-high Temperature Ceramics with Solid Solution Chemistry: The Example of Tantalum Carbide," XXVII International Materials Research Congress (Cancún, México. Date: August 19-24, 2018).
- "Crystallography of Divalent Hexaborides: Synchrotron, Raman, and atomic-resolution microscopy studies," 1st CaliBaja Symposium and Workshop: Advances and Collaborations in Microscopy (Tijuana, México. Date: February 15-16, 2018).
- "Phase Stability and Nano-domain Formation in Alkaline-earth Hexaborides," International Conference on Sintering 2017 (San Diego, CA. Date: November 12-16, 2017).
- "Mesoporous Materials for Desulfurization Technologies: Fabrication and Enzyme Immobilization," MS&T17 (Pittsburgh, PA. Date: October 8-12, 2017).
- **Keynote Lecture:** "Control de Morfología y Superficies en Materiales Cerámicos: Fundamentos y Aplicaciones," 1st International Conference on Engineering and Technology Sciences (Tijuana, México. Date: September 20-22, 2017).
- "Crystallography of Divalent Hexaborides: Synchrotron, Raman, and atomic-resolution microscopy studies," XXVI International Materials Research Congress (Cancún, México. Date: August 20-25, 2017).
- "Design and Manufacturing of High-hardness Composites: Emerging Materials for Extreme Environments," XXVI International Materials Research Congress (Cancún, México. Date: August 20-25, 2017).
- "How to Control the Shape of Matter (and Other Curiosities of Nature)," Cross-Border Innovation Summit (La Jolla, CA. Date: June 9, 2017).
- "Iron-based Amorphous Metals for Impact and Corrosion Resistance Applications: The Effect of Pressure and Current on Devitrification Kinetics," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- **Keynote Lecture:** "Materiales Aeroespaciales: Investigación y Aplicación," II Semana Academica de Ingeniería Aeroespacial (Tijuana, Mexico. Date: October 10-14, 2016).

- "Phase Formation in Divalent Hexaborides: Prospects for Hydrogen Storage Technologies," XXV International Materials Research Congress (Cancún, México. Date: August 14-19, 2016).
- "Designing Advanced Composites via Spark Plasma Sintering," SHPE 2015 (Baltimore, MD. Date: November 11-15, 2015).
- "Designing *In Situ* and *Ex Situ* Bulk Metallic Glass Matrix Composites via Spark Plasma Sintering in the Super Cooled Liquid State," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).
- "Metal Hexaborides and Their Utilization for Solid State Hydrogen Storage," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).
- "Mechanisms of Pore Formation During Spark Plasma Sintering of Ultra-high Hardness Metallic and Ceramic Materials," 11th Pacific Rim Conference on Ceramic Societies (Jeju, Korea. Date: August 30 – September 4, 2015).
- "Metal Hexaboride Diffusion and Hydrogen Storage Prospects," XXIV International Materials Research Congress (Cancún, México. Date: August 16-20, 2015).
- "Designing Fe-based Bulk Metallic Glass Matrix Composites via Spark Plasma Sintering," XXIV International Materials Research Congress (Cancún, México. Date: August 16-20, 2015).
- **Plenary Lecture:** "Control de Morfología y Superficies en Nanopolvos para Aplicaciones Electromagnéticas," Semana Académica 2014 de la Ingeniería en Nanotecnología, Ingeniería Química e Ingeniería Ambiental, Instituto Tecnológico de Tijuana (Tijuana, México. Date: November 20, 2014).
- "Recent Advances in Powder Synthesis and Microstructure Evolution of Metal and Ceramic Composite Materials," HyMaP 2014 (Busan, Korea. Date: November 10-13, 2014).
- "Recruiting and Retaining Faculty of Color," 21st Annual Institute on Teaching and Mentoring (Atlanta, GA. Date: October 30 – November 2, 2014).
- "Densification Behavior and Interfaces of Ultra-high Temperature Carbide Materials for Extreme Environment Applications," Materials Science and Technology 2014 Conference & Exposition (Pittsburgh, PA. Date: October 12-16, 2014).
- **Keynote Lecture:** "Recent Advances in Nano-scale Metallic and Ceramic Powder Sintering and Microstructure Evolution," International Congress on Applications of Nanotechnology (Mexico City, México. Date: September 30 – October 2, 2014).
- "Spark Plasma Sintering of Structurally Amorphous Metals: Control Parameters and Compositing Effects," XXIII International Materials Research Congress (Cancún, México. Date: August 17-21, 2014).
- "Correlation Between Particle Size and Sintering Behavior of Nanopowders," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- **Keynote Lecture:** "Límites y Comportamientos Básicos Afines a la Síntesis de Nanopolvos por Procesos Coloidales," XL Aniversario de la Facultad de Ciencias Químicas e Ingeniería, Universidad Autónoma de Baja California (Tijuana, México. Date: March 10, 2014).
- "Scalable Manufacturing of Unique Hexaboride Nanomaterials for Advanced Energy Generation and Gas Storage Applications," TMS 2014 Annual Meeting & Exhibition (San Diego, CA. Date: February 16-20, 2014).
- "Increasing College Graduation Rates Among Hispanic Students in STEM," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013).
- "Hispanics in Engineering," UC ADVANCE Paid Roundtable: "The Role of Contributions to Diversity in Faculty Hiring and Academic Review" (La Jolla, CA. Date: October 25, 2013).

- "The Thermoelectric Behavior of Dense Non-stoichiometric Oxides Prepared by Spark Plasma Sintering," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013).
- "Molecular Dynamics Simulations of Ion Transport in Hexaborides," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013).
- "Assembly Strategies for the Formation of Stable Reverse Micellar Systems: Implications for the Synthesis of Dispersed Nanoparticles," Materials Science and Technology 2013 Conference & Exposition (Quebec, Canada. Date: October 27-31, 2013).
- "Phase Stability and Boundary Structure of Unique Iron-based Amorphous Metal Composites: Processing and Modeling," 10th Pacific Rim Conference on Ceramic and Glass Technology (San Diego, CA. Date: June 2-7, 2013).
- "Latinas in Engineering: Challenges and Strategies for Recruitment, Retention and Career Development," UC Davis ADVANCE Year 1 Retreat (Davis, CA. Date: April 26, 2013).
- "How to Control the Shape of Matter (and Other Curiosities of Nature)," UCSD Jacobs School of Engineering Research Expo (La Jolla, CA. Date: April 18, 2013).
- "Limits of Precipitation and Combustion Processes for the Synthesis of Nanopowders of Unique Morphologies," 2nd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 4-8, 2013).
- "Límites y Comportamientos Básicos Afines a la Síntesis de Nanopolvos de Morfologías Singulares," IV Congreso Nacional de Ciencia e Ingeniería en Materiales 2013 (Pachuca, México. Date: February 18-22, 2013).
- "Densification Behavior and Interfaces of Tantalum Carbide Nanopowders Prepared by a Solvothermal Process and Consolidated by Spark Plasma Sintering," 3rd International Solvothermal and Hydrothermal Association Conference (Austin, TX. Date: January 13-17, 2013).
- "Exploring Fundamental Responses and Limits of Precipitation Processes for the Synthesis of Nanopowders of Unique Morphologies," Society of Hispanic Professional Engineers 2012 (Fort Worth, TX. Date: November 14-18, 2012).
- "The Role of Interfaces and Surface Structure During Spark Plasma Sintering of Nanopowders," XXI International Materials Research Congress (Cancún, México. Date: August 13-16, 2012).
- "Mentorship and Reciprocity," SHPE NILA 2012 Graduate Leadership Institute (Denver, CO. Date: August 4, 2012).
- "Getting What You Came For - Strategic Planning for Your Graduate Degree Success and Career," SHPE NILA 2012 Graduate Leadership Institute (Denver, CO. Date: August 4, 2012).
- "Las Nanociencias: Una Visión Hacia el Futuro," VI Encuentro Internacional en Nanotechnología (Lagos de Moreno, México. Date: July 11, 2012).
- "The Effect of Electrolyte Concentration and Ionic Charge on the Stability of Reverse Micellar Solutions for the Synthesis of Nanopowders," VI Encuentro Internacional en Nanotecnología (Lagos de Moreno, México. Date: July 11, 2012).
- "Women of Color in STEM," 2012 Joint Annual Meeting Broadening Participation Research (Washington, DC. Date: June 13, 2012).
- "Fast Processing of Advanced Ceramics for Sensor and Thermoelectric Applications: The Role of Powder Morphology During Spark Plasma Sintering of Nanopowders," 36$^{th}$ International Conference & Exposition on Advanced Ceramics & Composites (Daytona Beach, FL. Date: January 24, 2012).

- "Fundamental Aspects of Reverse Micelle Stability for Controlled Synthesis of Nanoparticles," First Meeting of the American Initiative on Metal Clusters and Nanoalloys (San Antonio, TX. Date: November 16-18, 2011).
- "Fast Synthesis Techniques for the Preparation of Electronic Ceramics," Society of Hispanic Professional Engineers 2011 (Anaheim, CA. Date: October 29, 2011).
- "The Effect of Dispersion and Particle Size on the Consolidation Behavior of Nanopowders during Spark Plasma Sintering," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- "Breaking the Cycle of Hispanic Under-Education," Diversity Dialogue Speaker Series, National Science Foundation (Arlington, VA. Date: September 14, 2011).
- "The Effect of Crystallite Size and Particle Size on the Consolidation Behavior of Nanopowders during Current-Assisted Sintering," International Workshop on Field Assisted Sintering Technology (State College, PA. Date: August 24-25, 2011).
- "A Pathway to the Scaled-Up Manufacturing of Nanostructured Refractory Ceramics for Ultra-High Temperature Applications," XX International Materials Research Congress (Cancún, México. Date: August 15-18, 2011).
- "Processing of Nanostructured Refractory Ceramics for Ultra-High Temperature Applications," The 9$^{th}$ International Meeting of Pacific Rim Ceramic Societies (Cairns, Australia. Date: July 10-14, 2011).
- "Fundamental Aspects of Reverse Micelle Stability for Controlled Synthesis of Nanoparticles," 8$^{th}$ International Topical Meeting on Nanostructured Materials and Nanotechnology (Tuxtla Gutiérrez, México. Date: May 23-25, 2011).
- "Template Synthesis of Mesoporous Scandia-Stabilized Zirconia Powders for Solid-Oxide Fuel Cell Applications," XVIII International Materials Research Congress (Cancún, México. Date: August 16-21, 2009).
- "Exploring Powder Particle Size/Grain Size Correlations During Spark Plasma Sintering of Oxide Nanoparticles Prepared by Reverse Micelle Synthesis," 8$^{th}$ Pacific Rim Conference on Ceramic and Glass Technology (Vancouver, Canada. Date: June 4, 2009).
- "New Synthesis and Sintering Methods in Materials Research," Society for the Advancement of Chicanos and Native Americans in Science 2008 (Salt Lake City, UT. Date: October 9-11, 2008).
- "Precipitation Processes for the Synthesis of Nanostructured Powders," XVII International Materials Research Congress (Cancún, México. Date: August 19, 2008).
- "Precipitation Processes for the Synthesis of Nanostructured Powders," National Society of Hispanic Physicists Annual Meeting (Washington, DC. Date: February 20-24, 2008).
- "Precipitation Processes for the Synthesis of Nanostructured Oxides and Borides," Nanotech 2007 (Monterrey, Mexico. Date: November 12, 2007).
- "Spark Plasma Sintering of Fe-Based Structural Amorphous Metals (SAM) with $Y_2O_3$ Nanoparticle Additions," Materials Science and Technology 2007 Conference and Exhibit, MS&T 2007 (Detroit, Michigan. Date: September 18, 2007).
- "Synthesis of Carbide Nanopowders Via Solvothermal Reduction," XV International Materials Research Congress (Cancún, México. Date: August 22, 2006).
- "Development of Project-Based Introduction to Materials Engineering Modules," V International Workshop on Materials Education (Córdoba, Argentina. Date: April 20, 2006).
- "Large Scale Synthesis of Magnetic Nanopowders," 30$^{th}$ International Conference & Exposition on Advanced Ceramics and Composites (Cocoa Beach, FL. Date: January 26, 2006).

- "Reverse Micelle Synthesis of Magnetic Nanopowders," Nanotech 2005 (Ensenada, México. Date: September 19, 2005).
- "Synthesis and Consolidation of Nanopowders Via a Unique Reverse Micelle Synthesis Process and Spark Plasma Sintering," 6th International Meeting of Pacific Rim Ceramic Societies (Maui, HI. Date: September 14, 2005).
- "Reverse Micelle Synthesis of Ceramic Nanopowders," High-Performance Corrosion Resistant Materials Meeting / DARPA / DOE (Oahu, HI. Date: January 11, 2005).
- "Development of a Minor Program in Nanotechnology," Plenary Lecture at the IV International Workshop on Materials Education (Chihuahua, México. Date: July 6, 2004).
- "Reverse Micelle Synthesis and Consolidation of Zirconia Nanopowders," XIII International Materials Research Congress (Cancún, México. Date: August 24, 2004).

## CONFERENCE PRESENTATIONS

- E.J. Espinosa- Cruz, A.A. Ramírez-Acosta, A. Stubbers, G.B. Thompson, O.A. Graeve, M.S. García-Vázquez, "Comparison of Deep Conditional Generative Models for Scanning Electron Microscopy Image Reconstruction," Optics and Photonics for Information Processing XIX (San Diego, CA. Date: August 3-7, 2025).
- E. Solano-Castrejón, A.A. Ramírez-Acosta, A. Stubbers, G.B. Thompson, O.A. Graeve, M.S. García-Vázquez, "CNN-based and Optical Flow-based Image Interpolation for TaC Ceramics," Optics and Photonics for Information Processing XIX (San Diego, CA. Date: August 3-7, 2025).
- S.S. Estrada, D. Ji, and O.A. Graeve, "Transition Metal Doping: A Route to Morphology Control in Hafnium Carbide Powders," ACS Spring 2025 (San Diego, CA. Date: March 23-27, 2025).
- F.J. Suarez, R. Vazquez-Duhalt, and O.A. Graeve, "Immobilization of Laccases on CuO and ZnO Nanoparticles: Catalytic Properties and Water Bioremediation Study," ACS Spring 2025 (San Diego, CA. Date: March 23-27, 2025).
- S. Ortega, N. Stacey-Alcantara, and O.A. Graeve, "Controlled Morphology of TaC Nanoparticles via Transition Metal Doping," ACS Spring 2025 (San Diego, CA. Date: March 23-27, 2025).
- A. Stubbers, S. Hossain, J.P. Santiago, O.A. Graeve, C.R. Weinberger, and G. Thompson, "Connecting Microscale-to-Macroscale Fracture Toughness from Single Grain Transition Metal Carbide Testing," 49th International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 29, 2025).
- O.A. Graeve, "Efficient Luminescent Materials for White Light Illumination: Status and Future Prospects," 3er Congreso Internacional Objetivos de Desarrollo Sostenible: Avances, Metas y Perspectivas a Mitad del Camino (Hermosillo, México. Date: October 17, 2024).
- R. Morton, A. Hirales, V. Vasquez, O. Graeve, "Lithium Dopant and Surface Effects on the Band Gap of Calcium Hexaboride ($CaB_6$) Using DFT Methods," Materials Science and Technology Technical Meeting and Exhibition (Columbus, OH. Date: October 1-4, 2023).
- V.R. Vasquez, R. Morton, A. Hirales, and O. Graeve, "Surface effects on the electronic properties of calcium hexaboride ($CaB_6$): A DFT first-principles study," 31st International Materials Research Congress (Cancún, México. Date: August 14-19, 2023).
- J. Metera, E. Zhou, J.E. Garay, and O.A. Graeve, "Morphology control in $BiFeO_3$: A spark plasma sintering study," XVIII Conference & Exhibition of the European Ceramic Society (Lyon, France. Date: July 2-6, 2023).

- A. Hirales, R. Morton, V.R. Vasquez, and O.A. Graeve, "Band gap tailoring in doped alkaline-earth hexaborides: Advanced materials for neutron detection applications," XVIII Conference & Exhibition of the European Ceramic Society (Lyon, France. Date: July 2-6, 2023).
- S. Ortega, J. Dong, J. Doan, K. Siraj, and O.A. Graeve, "Tailored morphology of TaC nanoparticles by introduction of transition metal dopants," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- S. Estrada, R. Chavez, and O.A. Graeve, "Morphology control of doped hafnium carbide powders," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- S. Tamakloe, M. Amachraa, J. Brgoch, S.P. Ong, and O.A. Graeve, "Eu-doped $Ca_{4-x-y}(Sr,Ba)_xEu_yLaO(BO_3)_3$ compounds for efficient white-light illumination," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- A. Hirales, J. Nakamura, and O.A. Graeve, "Design and synthesis of alkaline-earth doped hexaborides with sodium and potassium dopants," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- J, Metera, A. Wilke, and O.A. Graeve, "Novel method of $BiFeO_3$ purification by acid washing determined from ICP-MS analyses," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- F.J. Suarez, E. Khan, R. Vazquez-Duhalt, and O.A. Graeve, "Immobilization of laccases on ZnO and CuO nanoparticles and the effect of copper ions on their stability and catalytic activity," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- C.I. Martínez-Cruz and O.A. Graeve, "Freeze casting of $LaNbO_4$ shape memory ceramics," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- A. Hirales, V.R. Vasquez, and O.A. Graeve, "Advanced materials for neutron detection applications: Design and synthesis of alkaline-earth doped hexaborides," TMS 2023 Annual Meeting & Exhibition (San Diego, CA. Date: March 19-23, 2023).
- S. Estrada and O.A. Graeve, "Diseño de materiales para aplicaciones de ultra alta temperatura en el sector aeroespacial: control de la morfología del polvo en carburos," World Space Week 2022 (Tijuana, México. Date: October 7, 2022).
- V. Vakharia, L. Zhang, E. Rodas-Lima, C. Park, E. Torresani, E. Olevsky, and O.A. Graeve, "Processing of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature, Irradiation Resistant Ceramics," Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (Panama City, Panama. Date: July 25, 2022).
- O.A. Graeve, V. Vakharia, and L. Zhang, "Synthesis and Crystallography of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature and Irradiation Resistant Ceramics," ECI Ultra-high Temperature Ceramics: Materials for Extreme Environment Applications V (Snowbird, UT. Date: June 5-8, 2022).
- J. Metera, A. Wilke, and O.A. Graeve, "Particle Formation Mechanism of Bismuth Ferrite Particles: Materials by Design for Antiferromagnetic and Ferroelectric Applications," American Chemical Society Spring 2022 (San Diego, CA. Date: March 20-24, 2022).
- F. Martínez, K. Juárez-Moreno, M. Herrera, and O.A. Graeve, "*In vitro* Pre-osteoblast Cell Differentiation by Luminescent Hydroxyapatite," TMS 2022 Annual Meeting & Exhibition (Anaheim, CA. Date: February 27-March 3, 2022).
- F.J. Suárez, R. Vázquez-Duhalt, and O.A. Graeve, "Immobilization of Laccase on CuO Nanoparticles: Stability, Catalytic Activity, and Cu Ion Exchange," TMS 2022 Annual Meeting & Exhibition (Anaheim, CA. Date: February 27-March 3, 2022).

- A. Hirales and O.A. Graeve, "Crystal Structure of Alkaline-doped Calcium and Strontium Hexaborides," TMS 2022 Annual Meeting & Exhibition (Anaheim, CA. Date: February 27-March 3, 2022).
- V.S. Vakharia, L. Zhang, S. Sufy, and O.A. Graeve, "Solvothermal Synthesis of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature, Irradiation Resistant Ceramics," 14th Pacific Rim Conference on Ceramic and Glass Technology," (Vancouver, Canada. Date: December 12-17, 2021).
- A. Hirales and O.A. Graeve, "Analysis of Crystal Structure in Strontium and Calcium Hexaborides with Lithium Dopancies," Materials Science and Technology 2021 (Columbus, OH. Date: October 17-21, 2021).
- O.A. Graeve, E. Novitskaya, K. Karandikar, K. Cummings, M. Mecartney, "Hall-Petch Effect in Binary and Ternary Alumina / Zirconia / Spinel Composites," 1st Conference on FAST/SPS: From Research to Industry (Poznan, Poland. Date: October 25-26, 2021).
- E.M. Bullard, M. Abi Ghanem, A. Yazdani, F. Allein, I. Torres, T. Ren, O.A. Graeve, N. Boechler, and K. Roy, "Functional Consequences of Changing Shell Mineralogy in Response to Anthropogenic Climate Change in a Foundational Marine Bivalve," 2021 ESA Annual Meeting (Date: August 2-5, 2021).
- L. Trahan, G. Miranda, and O.A. Graeve, "Reflecting on 20 Years of Centralized Engineering Student Diversity Initiatives (Experience)," 2021 ASEE Annual Conference (Date: July 26-29, 2021).
- J.M. Metera and O.A. Graeve, "Morphologically Cubic $BiFeO_3$ for Improved Electrical Properties," EMA 2021 (Date: January 19-21, 2021).
- J.A. Hernández Marquez, F. Romo García, M. Herrera Zaldivar, O. Graeve, P.G. Mani González, "Analysis and Characterization of $Al_xO_y$ Obtained Through Homemade Thermal-ALD and Plasma Enhanced-ALD," XIII International Conference on Surfaces, Materials and Vacuum (Date: October 19-22, 2020).
- M. Blair-Loy, V. Mayorova, R. Hegazy, O.A. Graeve, and P.C. Cosman, "Steering Women Out of Engineering: Gendered Occupational Recommendations from Career Assessment Tools," ASA 2020 Annual Meeting (San Francisco, CA. Date: August 8-11, 2020).
- A. Yazdani, D. Dewitt, W. Huang, G.W.H. Höhne, S.T. Misture, J.E. Garay, D. Kisailus, and O. Graeve, "Mechanical Deformation of Iron-based *In Situ* Metallic Glass Matrix Composites," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- N.F. Qari, A. Yazdani, D. Dewitt, J.E. Garay, and O. Graeve, "Corrosion Behavior of SAM2×5 Amorphous Steel / Crystalline *In Situ* Composite," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- C.I. Vargas-Consuelos, F. Monge, A. Yazdani, and O. Graeve, "A Differential Scanning Calorimetry Study of the Combustion Synthesis of Metal Hexaborides," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- J. Campbell, C. Ruestes, T. Pascal, and O. Graeve, "Molecular Dynamics Simulations of Iron-based Metallic Glasses During Spark Plasma Sintering," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- S. Choi and O. Graeve, "Fabrication of Uniform-sized Hemispherical Mesopores on Gold-coated Silver Nanocubes for Enzyme Immobilization," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- J. Metera and O. Graeve, "Cubic Sub-micron $BiFeO_3$ Powders for Improved Electrical Properties," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- R.E. Ridley, J.P. Kelly, H. Fathi-Kelly, and O. Graeve, "Modified Gouy-Chapman-Stern Model of the Aqueous Na-AOT Reverse Micelle Sub-structure with the Addition of Salts," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).

- R.E. Ridley, E. Alvarado, V.R. Vasquez, and O. Graeve, "Investigating Short-chain Alcohol Based Microemulsions as Viable Nanoparticle Synthesis Systems: Do Reverse Micelles Form in Ethanol/AOT/*n*-Heptane Systems?," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- F. Martinez, E. Novitskaya, M. Herrera, K. Juárez-Moreno, and O. Graeve, "Biocompatibility Study of Luminescent Hydroxyapatite," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- T. Ren, R. Tran, S. Lee, A. Bandera, M. Herrera, X.-G. Li, S. Ong, O. Graeve, "Morphological Control of Tantalum Carbide through Surface Doping," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- A. Yazdani, D. Dewitt, Z. Li, H. Quan, W. Huang, G.W.H. Höhne, S.T. Misture, J.E. Garay, D. Kisailus, M.A. Meyers, and O.A. Graeve, "Structural Evolution and Mechanical Evaluation of In Situ Amorphous Steel Matrix Composites," 2019 MRS Fall Meeting & Exhibit (Boston, MA. Date: December 1-6, 2019).
- O.E. Jaime-Acuña, S.T. Misture, D. Edwards, V.R. Vasquez, O. Raymond-Herrera, and O.A. Graeve, "Current Effects on Atomic Displacements and Phonon Dissipation in Hexaboride Materials: A Raman Spectroscopy Study," 2do Congreso Internacional de Ciencias de la Ingeniería y Tecnología (Tijuana, México. Date: September 25-27, 2019).
- R. Ridley, E. Alvarado, V.R. Vasquez, and O.A. Graeve, "Investigating Short-Chain Alcohol Based Microemulsions as Viable Nanoparticle Synthesis Systems: Do Reverse Micelles Form in Ethanol/AOT/n-Heptane Systems?," XXVIII International Materials Research Congress (Cancún, México. Date: August 18-23, 2019).
- E. Bullard, I. Torres, O.A. Graeve, and K. Roy, "Temporal Trends in Shell Calcification in Marine Bivalves: Paleontological Baselines for Understanding Species-Specific Responses in a Changing Ocean," 11th North American Palentological Convention (Riverside, CA. Date: June 23-27, 2019).
- J. McKittrick, J. Ha, Z. Wang, W.B. Im, S.P. Ong, and O.A. Graeve, "Review of Phosphor Identification and Synthesis Methods," 12th International Conference on Ceramic Materials and Components for Energy and Environmental Applications (Suntec City, Singapore. Date: July 22-27, 2018).
- O.A. Graeve, "Design of Novel Corrosion Resistant Materials: An Emerging Technology for Extreme Environments," MegaRust 2018 (San Diego, CA. Date: May 22-24, 2018).
- F. Martinez-Pallares, M. Herrera, and O.A. Graeve, "In Vitro Studies of RE Doped Hydroxyapatite," IV Symposium of Nanoscience and Nanomaterials (Ensenada, México. Date: April 23-27, 2018).
- M. Sanchez and O.A. Graeve, "Synthesis of Cubic Microstructures of Perovskite Materials," IV Symposium of Nanoscience and Nanomaterials (Ensenada, México. Date: April 23-27, 2018).
- J. Ha, E. Novitskaya, G. Hirata, C. Zhou, R. Ridley, O.A. Graeve, Z. Wang, S.P. Ong, and J. McKittrick, "A Method to Improve Quantum Efficiency of Phosphors in the Submicron Size Regime Using a Flux for Solid State Lighting Applications," 233rd ECS Meeting (Seattle, WA. Date: May 13-17, 2018).
- J. McKittrick, J. Ha, Z. Wang, O. Graeve, and S.P. Ong, "Phosphor composition prediction and synthesis using a combined experimental and computational approach," 42nd International Conference and Expo on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 21-26, 2018).
- K.K. Ohtaki, K.K. Karandikar, O.A. Graeve, C. Trautmann, M. Tomut, M. Patel, and M.L. Mecartney, "Radiation Damage in a Multiphase Ceramic (YSZ, $Al_2O_3$ and $MgAl_2O_4$) Irradiated With 946 MeV Au Ions," 42nd International Conference and Expo on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 21-26, 2018).
- O.A. Graeve, "Engineering 101," Transfer Motivational Conference (La Jolla, CA. Date: September 30, 2017).

- O.A. Graeve, "Call to Action-Latino Faculty & Navigating the Faculty Application Process," SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 20-23, 2017).
- S. Seo and O.A. Graeve, "Synthesis and Interface Boundary Characteristics of Gold/Cobalt Janus Nanoparticles," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- T. Ren and O.A. Graeve, "Tailored Carbide Powder Morphologies: Synthesis and Mechanisms of Formation," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- S. Qiao, E. Novitskaya, F. Sanchez, R. Vazquez-Duhalt, and O.A. Graeve, "Thermal and Electrical Conductivities of Mesoporous Nanofluids and Applications for Enzyme Catalysis," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- S. Choi, R. Vazquez-Duhalt, O.A. Graeve, "Fabrication of Mesoporous Gold-coated Polystyrene Particles for Enzyme Immobilization," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- K.K. Karandikar, A.W. Travis, K. Ohtaki, M.M. Mecartney, and O.A. Graeve, "Correlation Between Particle Size and Grain Size Distribution in Single/Multiphase Ceramic Oxide Surrogate Materials," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- J.T. Cahill, M. Alberga, D. Edwards, S.T. Misture, V.R. Vasquez, and O.A. Graeve, "Phase Stability of Mixed-Cation Alkaline-Earth Hexaborides: Insights from X-ray Diffraction and High-resolution Transmission Electron Microscopy," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- E. Novitskaya, S. Diaz de la Torre, T.A. Esquivel-Castro, G.R. Dieguez-Trejo, and O.A. Graeve, "Current-assisted-extrusion of Structural Amorphous Metals: Insight into Microstructure Formation and Mechanical Properties," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- M.B. Frank, S.H. Siu, S.E. Naleway, C.-H. Liu, K. Karandikar, O.A. Graeve, and J.M. McKittrick, "Synergistic Porous Structures from Magnetic Freeze Casting with Surface Magnetized Alumina Particles and Platelets," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- K. Khalifa, C. Shih, E. Song, K. Kritsuk, O. Graeve, L. Alva, H. Zhao, X. Huang, and C. Deck, "Modular Fabrication and Characterization of Complex Silicon Carbide Composite Structures," 41st International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 22-27, 2017).
- J. McKittrick, J. Ha, Z. Wang, G.A. Hirata, O.A. Graeve, and S.P. Ong, "Review of Phosphor Identification and Synthesis Methods," 41st International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 22-27, 2017).
- K. Karandikar, A. Travis, K. Ohtaki, M. Mecartney, and O.A. Graeve, "Correlation Between Particle Size and Grain Size Distributions in Single/Multiphase Ceramics," Materials Science and Technology 2016 Conference & Exposition (Salt Lake City, UT. Date: October 23-27, 2016).
- K. Ohtaki, M. Patel, K. Karandikar, O.A. Graeve, M. Crespillo, Y. Zheng, and M.L. Mecartney, "Radiation Damage in Multiphase Ceramics," Materials Science and Technology 2016 Conference & Exposition (Salt Lake City, UT. Date: October 23-27, 2016).
- T. Ren and O.A. Graeve, "Tailored Carbide Powder Morphologies: Synthesis and Mechanisms of Formation," Materials Science and Technology 2016 Conference & Exposition (Salt Lake City, UT. Date: October 23-27, 2016).

- A.W. Travis, K. Karandikar, A.T. Nelson, O.A. Graeve, and M.L. Mecartney, "Thermal Conductivity of Multiphase Ceramics for an Inert Matrix Fuel," Materials Science and Technology 2016 Conference & Exposition (Salt Lake City, UT. Date: October 23-27, 2016).
- C. Ayala, M.B. Frank, L. Guibert, K. Karandikar, C.H. Liu, S.H. Siu, O.A. Graeve, and J.M. McKittrick, "Magnetic Freeze Casting with Surface Magnetized Hydroxyapatite for Bioinspired Bone Implants," Biomedical Engineering Society Annual Meeting (Minneapolis, MI. Date: October 5-8, 2016).
- J. Ha, J.K. Han, C. Zhou, E. Novitskaya, G. Hirata, O.A. Graeve, and J. McKittrick, "Synthesis and Luminescent Characterization of Core-Shell Nanophosphors," PRiME 2016, (Honolulu, HI. Date: October 2-7, 2016).
- V.R. Vasquez, K. Schmidt, O. Jaime, J.T. Cahill, D. Edwards, S.T. Misture, and O.A. Graeve, "Studies of Hydrogen Interaction with Metal Hexaboride Surfaces: Insights from DFT, CPMD and Experimental Results," XXV International Materials Research Congress (Cancún, México. Date: August 14-19, 2016).
- J. Ha, E. Novitskaya, G.A. Hirata, O.A. Graeve, and J. McKittrick, "A Method to Improve Quantum Efficiency of Nanosized Phosphors for Near UV LEDS," XXV International Materials Research Congress (Cancun, México. Date: August 14-19, 2016).
- J. Ha, Z. Wang, E. Novitskaya, G.A. Hirata, O.A. Graeve, S.P. Ong, J. McKittrick, "Discovery of Near-UV Excited Phosphors: A Combined Experimental and Computational Study," XXV International Materials Research Congress (Cancun, México. Date: August 14-19, 2016).
- J. Ha, Z. Wang, E. Novitskaya, G.A. Hirata, O.A. Graeve, S.P. Ong, and J. McKittrick, "Review of Phosphor Identification and Synthesis Methods," CIMTEC 2016 (Perugia, Italy. Date: June 5-9, 2016).
- V.R. Vasquez, K. Schmidt, S.T. Misture, D. Edwards, and O.A. Graeve, "Energetics of Hydrogen Interactions on Hexaboride Surfaces: Experimental Results and Insights from DFT and CPMD Calculations," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3-4, 2016).
- J. Ha, Z. Wang, E. Novitskaya, G. Hirata, O. Graeve, S.P. Ong, and J. McKittrick, "Improvement of Quantum Efficiency of the Nanosized Phosphors Using a Flux," 229th Electrochemical Society Meeting (San Diego, CA. Date: May 29 - June 2, 2016).
- M.B. Frank, S.E. Naleway, T. Haroush, C.-H. Liu, S.H. Siu, J. Ng, I. Torres, A. Ismail, K. Karandikar, M.M. Porter, O.A. Graeve, and J. McKittrick, "Bioinspired by Bone: Magnetized Alumina for Strengthened Porous Scaffolds by Magnetic Freeze Casting," 2016 MRS Spring Meeting & Exhibit (Phoenix, AZ. Date: March 28 - April 1, 2016).
- R.E. Ridley, H. Fathi-Kelly, J.P. Kelly, V.R. Vasquez, and O.A. Graeve, "Structure and Stability of Reverse Micelles with Salt Additions: Experimental and Modeling Insights," ACS 251st National Meeting (San Diego, CA. Date: March 13-17, 2016).
- J.T. Cahill, M. Alberga, S. Misture, D. Edwards, V.R. Vasquez, and O.A. Graeve, "Phase Formation in Mixed Divalent Hexaborides," ACS 251st National Meeting (San Diego, CA. Date: March 13-17, 2016).
- C.I. Vargas-Consuelos, M.A. Camacho-López, and O.A. Graeve, "Formation and Reaction Mechanisms of Molybdenum Complex Species in Acid Solutions as Precursors of Hexagonal Molybdenum Trioxide," ACS 251st National Meeting (San Diego, CA. Date: March 13-17, 2016).
- M.L. Mecartney, K. Phillips, O.A. Graeve, K. Karandikar, and J.T Cahill, "Using Multiple Phases to Achieve Fine Grain Sizes with Spark Plasma Sintering (SPS) and Two-Step Reactive Sintering," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).

- K.K. Karandikar and O.A. Graeve, "Correlation Between Particle Size and Grain Size Distributions in Single/Multiphase Ceramics," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).
- J.P. Kelly, M. Alberga, B. Wang, S. Fuller, H. Fathi-Kelly, D. Edwards, and O.A. Graeve, "Defining and Sequencing Inorganic Material Genomes: A Case Study of Synthesis Effects on Thermoelectric Behavior of Titania," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).
- O.A. Graeve, E. Novitskaya, M. Herrera-Zaldivar, and G. Hirata Flores, "Unique Triboluminescent Ceramic/Polymer Coatings for Structural Health Monitoring Applications," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).
- K. Phillips, K. Karandikar, A.T. Nelson, O.A. Graeve, and M. Mecartney, "The Effect of Interfaces on Mechanical and Thermal Properties of Fine-Grained Ceramic Composite Nuclear Fuel," Materials Science and Technology 2015 Conference & Exposition (Columbus, OH. Date: October 4-8, 2015).
- G. Khanolkar, J.P. Kelly, O.A. Graeve, A.M. Hodge, V. Eliasson, "Shock Wave Response of a Novel Fe-based Bulk Metallic Glass for Ballistic Applications," American Society for Composites 30th Technical Conference (East Lansing, MI. Date: September 28-30, 2015).
- V.R. Vasquez, K.M. Schmidt, and O.A. Graeve, "Ca, Ba, and Sr Hexaborides Pair Potentials from DFT and MD," XXIV International Materials Research Congress (Cancún, México. Date: August 16-20, 2015).
- J. McKittrick, J. Ha, Z. Wang, G.A. Hirata, O.A. Graeve, and S.P. Ong, "Design and Development of Phosphors for Solid State Lighting," XXIV International Materials Research Congress (Cancún, México. Date: August 16-20, 2015).
- G. Khanolkar, J.P. Kelly, O.A. Graeve, A.M. Hodge, and V. Eliasson, "Response of an Fe-based Bulk Metallic Glass and its Partially Amorphous Composite to Shock Wave Loading," 30th International Symposium on Shock Waves (Tel Aviv, Israel. Date: July 20-24, 2015).
- G.R. Khanolkar, J.P. Kelly, O.A. Graeve, A.M. Hodge, and V. Eliasson, "Response of an Fe-based Bulk Metallic Glass to Shock Wave Loading," SEM 2015 Annual Conference and Exposition on Experimental and Applied Mechanics (Costa Mesa, CA. Date: June 8-11, 2015).
- J.T. Cahill, J. Bahena, M. Alberga, V.R. Vasquez, D. Edwards, O.A. Graeve, "Cation Diffusion in Metal Hexaborides and the Prospect of Solid State Hydrogen Storage," TMS 144th Annual Meeting & Exhibition (Orlando, FL. Date: March 15-19, 2015).
- J.T. Cahill and O.A. Graeve, "Consolidation of Cemented Tungsten Carbide with Non-traditional Metal Binders," TMS 144th Annual Meeting & Exhibition (Orlando, FL. Date: March 15-19, 2015).
- R. Kanakala, M. Opoku, J.P. Kelly, and O.A. Graeve, "Versatile Co-precipitation Route for Synthesis of High Temperature Nanocomposites," Materials Science and Technology 2014 Conference & Exposition (Pittsburgh, PA. Date: October 12-16, 2014).
- J.T. Cahill and O.A. Graeve, "Preparation of Hexaboride Nanocubes by Combustion Synthesis," Jacobs Energy Forum (La Jolla, CA. Date: May 7, 2014).
- H. Fathi-Kelly, J.P. Kelly, and O.A. Graeve, "Reverse Micelle Stability for Controlled Synthesis of Nanoparticles: Electrochemical Model and Precursor Effects," 2014 MRS Spring Meeting & Exhibit (San Francisco, CA. Date: April 21-25, 2014).
- O.A. Graeve, "How to Interview for a Research / Academic Position," SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 19, 2014).

- J.A. Inzana, D. Olvera, S.M. Fuller, O.A. Graeve, E.M. Schwarz, S.L. Kates, and H.A. Awad, "Design and Characterization of 3D Printed Collagen-Calcium Phosphate Composites for Bone Defect Repair," 60th Annual Meeting of the Orthopaedic Research Society (New Orleans, LA. Date: March 15-18, 2014).
- R. Navarro, V.R. Vasquez, and O.A. Graeve, "Molecular Dynamics Simulations of Reverse Micellar Solutions with Solvation Salts," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- J.P. Kelly, H. Fathi-Kelly, L.E. Jones, and O.A. Graeve, "Bulk Iron-based Amorphous Alloys and Composites with Enhanced Density," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- E. Novitskaya, M. Herrera Zaldivar, G. Hirata Flores, and O.A. Graeve, "Development of Unique Triboluminescent Coatings for Structural Health Monitoring Applications," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- C.I. Vargas-Consuelos, O.A. Graeve, and M.A. Camacho-Lopez, "Proceso de Nucleación y Crecimiento de $MoO_3$ en Fase Hexagonal a Partir de Molibdeno Disuelto en una Solución Acida Inestable," LVI Congreso Nacional de Física (San Luís Potosí, México. Date: October 28 – November 1, 2013).
- M. Alberga, O.A. Graeve, and D. Edwards, "Alkaline Earth Hexaborides: The Effect of Dopant Additions on Thermoelectric Properties," Materials Science and Technology 2013 Conference & Exposition (Quebec, Canada. Date: October 27-31, 2013).
- H. Fathi, J.P. Kelly, L.E. Jones, and O.A. Graeve, "Modeling and Design of Fe-based Amorphous Alloys with High Tungsten Content," Materials Science and Technology 2013 Conference & Exposition (Quebec, Canada. Date: October 27-31, 2013).
- J.P. Kelly, S.M. Fuller, M. Alberga, D.D. Edwards, and O.A. Graeve, "The Effect of $SiO_2$ on the Processing and Luminescence of $Lu_2SiO_5$:Ce Scintillators," Materials Science and Technology 2013 Conference & Exposition (Quebec, Canada. Date: October 27-31, 2013).
- J.P. Kelly, S.M. Fuller, M. Alberga, D.D. Edwards, and O.A. Graeve, "Processing Effects on the Thermoelectric Behavior of Dense Non-stoichiometric $TiO_2$ and ZnO Prepared by Spark Plasma Sintering," Materials Science and Technology 2013 Conference & Exposition (Quebec, Canada. Date: October 27-31, 2013).
- O.A. Graeve, H. Fathi, J.P. Kelly, D.R. Brown, and E.A. Lopez, "Non-optimized Reverse Micelle Synthesis of Oxide Nanopowders: Mechanisms of Precipitate Formation and Agglomeration Effects," XXII International Materials Research Congress (Cancún, México. Date: August 11-15, 2013).
- V.R. Vasquez and O.A. Graeve, "Modeling Mass Transport in Hexaboride Materials Using Molecular-Based Methods," XXII International Materials Research Congress (Cancún, México. Date: August 11-15, 2013).
- S. Haghighat, A. Hodge, J.P. Kelly, and O.A. Graeve, "Deformation Behavior of Structural Amorphous Metals (SAM) under Compression," TMS 2013 142nd Annual Meeting & Exhibition (San Antonio, TX. Date: March 3-7, 2013).
- C.I. Vargas-Consuelos, O.A. Graeve, and M.A. Camacho-López, "Proceso de Nucleación y Crecimiento de $MoO_3$ en Fase Hexagonal a Partir de Molibdeno Disuelto en una Solución Acida Inestable," IV Congreso Nacional de Ciencia e Ingeniería en Materiales (Pachuca de Soto, México. Date: February 18-22, 2013).
- S. Somov, S. Ghosh, O.A. Graeve, J.P. Kelly, and M. Alberga, "Novel Composite Interconnect for SOFC," 37th International Conference and Expo on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 27-February 1, 2013).

- J.P. Kelly and O.A. Graeve, "Tantalum Carbide Nanocomposites: Spark Plasma Sintering Behavior and Microstructural Character with the Addition of ZrC and WC," 37th Annual Conference on Composites, Materials, and Structures (Cocoa Beach, FL. Date: January 28-31, 2013).
- J.P. Kelly and O.A. Graeve, "The Combustion Synthesis and Spark Plasma Sintering of Tantalum Carbide to Study Grain Growth: Towards Obtaining a Nanostructure," Materials Research Society Fall 2012 Meeting (Boston, MA. Date: November 25-30, 2012).
- O.A. Graeve, M.S. Saterlie, P.J. Colmenares, S.T. Misture, H. Fathi, and L.E. Jones, "Phase Stability and Boundary Structure of Unique Nanoparticle-Reinforced Iron-Based Amorphous Metal Composites: Processing and Modeling," Materials Research Society Fall 2012 Meeting (Boston, MA. Date: November 25-30, 2012).
- M.S. Saterlie, R. Kanakala, D.D. Edwards, S.T. Misture, and O.A. Graeve, "Unique Beta-Gallia-Rutile Intergrowth Structures for High-Temperature Thermoelectric Applications: Processing and Properties," Materials Research Society Fall 2012 Meeting (Boston, MA. Date: November 25-30, 2012).
- V.R. Vasquez, B. Williams, and O.A. Graeve, "Modeling of Ionic Solutions in the Reverse Micelle System AOT/Water/Isooctane using Molecular Dynamics," Society of Hispanic Professional Engineers 2012 (Fort Worth, TX. Date: November 14-18, 2012).
- R. Kanakala, M.S. Saterlie, D.W. Davies, S. Escalante, S. Diaz de la Torre, and O.A. Graeve, "Spark Plasma Sintering of Fe-Based Amorphous Metal / $Y_2O_3$ Ceramic Composites," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- J.P. Kelly and O.A. Graeve, "Densification Behavior and Interfaces of Tantalum Carbide Nanopowders Consolidated by Spark Plasma Sintering," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- J. Blendell, C. Handwerker, and O.A. Graeve, "Mobility of Faceted Interfaces in MgO-NiO Alloys," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- D. Davies, J.P. Kelly, and O.A. Graeve, "Unique Preparation of Boron Nitride Materials for Ultra-high Hardness Applications," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- M. Alberga, J.P. Kelly, and O.A. Graeve, "Microstructural Design of Innovative Titania-Based Ceramics for Thermoelectric Applications," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- H. Fathi, J.P. Kelly, V.R. Vasquez, and O.A. Graeve, "Development of a Model of Reverse Micelle Size with Electrolyte Additions," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- B.M. Clark, J.P. Kelly, and O.A. Graeve, "The Use of Etchants to Develop Unique Morphologies in Tantalum Carbide Nanopowders," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- M.S. Saterlie, P.J. Colmenares, and O.A. Graeve, "Consolidation and Devitrification Behavior of Iron-Based Amorphous Alloys for Ballistic Applications," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- V.R. Vasquez, H. Fathi, J. Kelly, and O.A. Graeve, "Ionic Effects on the Stability and Morphology of AOT-Water-Isooctane Reverse Micelles: Molecular Dynamics and Light Scattering Perspective," XXI International Materials Research Congress (Cancún, México. Date: August 13-16, 2012).

- J.P. Kelly and O.A. Graeve, "Recent Advances on Bulk Tantalum Carbide Produced by Solvothermal Synthesis and Spark Plasma Sintering," XXI International Materials Research Congress (Cancún, México. Date: August 13-16, 2012).
- M. Redjdal, K. Hadidi, E.H. Jordan, O.A. Graeve, and C.M. Brunet, "Melt State Process for Uniform and Nanostructured Composite Powders," 14th DoD Electromagnetic Windows Symposium (San Antonio, TX. Date: May 1-3, 2012).
- K. Scott, M. Saterlie, O.A. Graeve, S. Misture, and D. Edwards, "Layered Ceramics for High-temperature Thermoelectric Generators," Materials Challenges in Alternative & Renewable Energy (MCARE) 2012 (Clearwater, FL. Date: February 26 – March 1, 2012).
- S. Somov, O. Graeve, S. Ghosh, and H. Nabielek, "Composite Interconnector for SOFC," 36th International Conference and Exposition on Advanced Ceramics and Composites (Daytona Beach, FL. Date: January 25, 2012).
- V.R. Vasquez, B. Williams, and O.A. Graeve, "Molecular Dynamics Modeling of Reverse Micelles: Dynamics of Precipitates in the Core," Society of Hispanic Professional Engineers 2011 (Anaheim, CA. Date: October 29, 2011).
- M.S. Saterlie, R. Kanakala, D. Edwards, and O.A. Graeve, "Synthesis and Characterization of β-Gallia-Rutile Intergrowth Structures for Thermoelectric Applications," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- J.P. Kelly, B. Clark, R. Kanakala, and O.A. Graeve, "A Pathway to the Scaled-Up Manufacturing of Nanostructured Refractory Ceramics for Ultra-High Temperature Applications," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- C.M. Brunet and O.A. Graeve, "Novel Processing of IR Transparent Nanocrystalline Ceramic Composites by Spark Plasma Sintering," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- H. Fathi, J.P. Kelly, R. Kanakala, D.W. Davies, and O.A. Graeve, "Study of Reverse Micelle Nanoreactors for the Controlled Preparation of Zirconium Hydroxide Precipitates," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- J.P. Kelly and O.A. Graeve, "Investigation of Solution Combustion Synthesis and Precipitation Synthesis Conditions on $TiO_2$ and ZnO Nanopowder Characteristics," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- M.S. Saterlie, H. Sahin, B. Kavlicoglu, Y. Liu, and O.A. Graeve, "Surfactant Effects on Dispersion Characteristics of Copper-Based Nanofluids for Thermal Transfer Applications," Materials Science & Technology 2011 Conference & Exposition (Columbus, OH. Date: October 16-20, 2011).
- J. Kelly and O.A. Graeve, "Preparation of Carbide Nanopowders by a Unique Solvothermal Method for High-Temperature Applications," Materials Science & Technology 2010 Conference & Exposition (Houston, TX. Date: October 18, 2010).
- J. Kelly and O.A. Graeve, "Nanocrystalline Hexaboride Powders Obtained by a Unique Solvothermal Synthesis Approach for use in Ultra-High Temperature Applications," Materials Science & Technology 2010 Conference & Exposition (Houston, TX. Date: October 18, 2010).
- R. Kanakala and O.A. Graeve, "A Novel Low-temperature Combustion Synthesis Process to Produce Sub-micron Sized Hexaborides," Materials Science & Technology 2010 Conference & Exhibition (Houston, TX. Date: October 18, 2010).
- V.R. Vasquez and O.A. Graeve, "Analysis of Reverse Micelles in AOT/water/isooctane using DLS and molecular dynamics," XIX International Materials Research Congress (Cancún, México. Date: August 19, 2010).

- R. Kanakala and O.A. Graeve, "Simultaneous Coprecipitation of 3Y-TZP/$MgAl_2O_4$ Nanopowder for Superplastic Applications," XIX International Materials Research Congress (Cancún, México. Date: August 18, 2010).
- M. Saterlie, K. Sinha, B. Kavlicoglu, Y. Liu, F. Gordaninejad, and O.A. Graeve, "A Comparative Study of Thermal Behavior of Iron and Copper Nanofluids," Materials Science and Technology 2009 (Pittsburgh, PA. Date: October 28, 2009).
- B.C. Williams and O.A. Graeve, "Exploring Powder Particle Size Correlations During Reverse Micelle Synthesis of Oxide Nanoparticles," Materials Science and Technology 2009 (Pittsburgh, PA. Date: October 29, 2009).
- J. Kelly, R. Kanakala, and O.A. Graeve, "Scaled-Up Manufacturing of Nanostructured Refractory Ceramics for High-Temperature Applications," 11th International Conference on Advanced Materials (Rio de Janeiro, Brazil. Date: September 21, 2009).
- K. Sinha, B. Williams, and O.A. Graeve, "An Approach to Develop an Integrated Process for the Development of Smart Luminescent Sensor Materials for Structural Health Monitoring Systems: The Case Study of BAS:Eu Triboluminescent Ceramics," Materials Research Society Fall 2008 Meeting (Boston, MA. Date: December 2, 2008).
- O.A. Graeve, R. Kanakala, K. Sinha, E. Wang, and B. Pearson, "Spark Plasma Sintering of Fe-Based Structural Amorphous Metals with $Y_2O_3$ Nanoparticle Additions," Sintering 2008 (San Diego, CA. Date: November 16-20, 2008).
- K. Sinha, B. Kavlicoglu, Y. Liu, and O.A. Graeve, "Development of Nanoscale Magneto-Rheological (nMR) Fluid: Effect of Particle Size on Flow and Thermal Characteristics through Microchannels," Materials Science and Technology 2008 Conference and Exhibit (Pittsburgh, Pennsylvania. Date: October 9, 2008).
- O.A. Graeve, R. Kanakala, and G. Rojas-George, "Synthesis of Nanostructured $LaB_6$ Powders for Micro- and Nano-satellite Propulsion Applications," Materials Science and Technology 2008 Conference and Exhibit (Pittsburgh, Pennsylvania. Date: October 8, 2008).
- V.R. Vasquez, A. Gardner, O. Graeve, "Molecular Dynamics of Reverse Micelles: Simulation Time and Pre-Built Structures Considerations in the Modeling of the AOT-Water-Isooctane System," 2007 AIChE Annual Meeting (Salt Lake City, Utah. Date: November 7, 2007).
- O.A. Graeve, J. Tinsley, and B. Pearson, "Synthesis and Densification of $Lu_2SiO_5$:Ce for Gamma-Ray Detection Applications," Materials Science and Technology 2007 Conference and Exhibit (Detroit, Michigan. Date: September 17, 2007).
- O.A. Graeve, K. Sinha, B. Pearson, S.R. Casolco, and J.E. Garay, "Synthesis and Consolidation of BAS:Eu Triboluminescent Ceramic Powders," European Ceramic Society 2007 Meeting (Berlin, Germany. Date: June 20, 2007).
- O.A. Graeve, S. Gleixner, and E. Douglas, "Design and Development of a Teaching Module in Nanotechnology," The Fifth Latin American and Caribbean Conference of Engineering Institutions (LACCEI 2007) (Tampico, Mexico. Date: June 1, 2007).
- S. Gleixner, O. Graeve, and E.P. Douglas, "Project-Based Modules for Teaching Materials Chemistry," American Chemical Society Annual Meeting (Chicago, IL. Date: March 25-29, 2007).
- V.R. Vasquez, A. Gardner, O. Graeve, and A. Clifton, "Molecular Dynamics Modeling of Reverse Micelles: Dynamics of $ZrO_2$ Particles in the Core," 2006 AIChE Annual Meeting (San Francisco, CA. Date: November 15, 2006).

- V.R. Vasquez, A. Gardner, O. Graeve, and A. Clifton, "Molecular Dynamics Modeling of Reverse Micelles: Modeling Strategies and Dynamics of $ZrO_2$ Particles in the Core," XV International Materials Research Congress (Cancún, México. Date: August 22, 2006).
- O.A. Graeve, K. Sinha, F. Gordaninejad, and J. Whiteley, "Reverse Micelle Synthesis of Nanoparticles in Organic Fluids," The 10th International Conference on Electrorheological Fluids and Magnetorheological Suspensions (South Lake Tahoe, CA. Date: June 20, 2006).
- O.A. Graeve, K. Sinha, F. Gordaninejad, and J. Whiteley, "Surfactant Stabilized Synthesis of Magnetic Nanoparticles in Fluids," The Third International Workshop on Advanced Smart Materials and Smart Structures Technology (South Lake Tahoe, CA. Date: May 30, 2006).
- O.A. Graeve, K. Sinha, D.R. Brown, and E.A. Lopez, "Reverse Micelle Synthesis of Magnetic Nanopowders," 9th International Ceramic Processing Science Symposium (Coral Springs, FL. Date: January 9, 2006).
- K. Sinha, O.A. Graeve, D.R. Brown, and E.A. Lopez, "Reverse Micelle Synthesis of Magnetic Nanopowders," XIV International Materials Research Congress (Cancun, Mexico. Date: August 24, 2005).
- A. Clifton, H. Singh, and O.A. Graeve, "Synthesis of Zirconia Nanocrystalline Powders by the Use of Reverse Micelles," XIV International Materials Research Congress (Cancun, Mexico. Date: August 24, 2005).
- O.A. Graeve, H. Singh, J.O. Corral, and K. Sinha, "Synthesis and Consolidation of Ceramic Powders via a Unique Reverse Micelle Synthesis Process," NASA Spacegrant Annual Meeting (Carson City, NV. Date: April 22, 2005).
- O.A. Graeve, S. Varma, J.O. Corral, and G. Rojas-George, "Synthesis and Characterization of Nanostructured Ceramic Luminescent Materials," XIII International Materials Research Congress (Cancún, México. Date: August 25, 2004).
- O.A. Graeve, "Mechanochemical Synthesis of Ti-Si-C Nanocrystalline Compounds," NASA Spacegrant Annual Meeting (Las Vegas, NV. Date: February 19, 2004).
- S. Varma and O.A. Graeve, "Synthesis and Characterization of Luminescent Materials," 55th Pacific Coast Regional and Basic Sciences Division Meeting of the American Ceramic Society (Oakland, CA. Date: October 22, 2003).
- O.A. Graeve, "Synthesis and Characterization of $Y_2O_3$:Yb,Tm Blue Nanophosphors," XII International Materials Research Congress (Cancún, México. Date: August 18, 2003).

## SEMINARS

- Preparatoria Federal Lázaro Cardenas (Tijuana, México. Date: March 19, 2025).
- Centro de Nanociencias y Nanotecnología-Universidad Nacional Autónoma de México (Ensenada, México. Date: February 19, 2025).
- General Atomics (La Jolla, CA. Date: August 15, 2024).
- Duke University (Date: June 27, 2024).
- Universidad de Guadalajara (Guadalajara, México. Date: November 10, 2023).
- Instituto Politécnico Nacional (México City, México. Date: October 27, 2023).
- Aerospace Corporation (El Segundo, CA. Date: November 30, 2022).
- Universidad Autónoma de Sinaloa (Los Mochis, México. Date: April 7, 2022).
- Technische Universiteit Eindhoven (Eindhoven, Netherlands. Date: March 17, 2022).

- Forschungszentrum Jülich (Jülich, Germany. Date: February 15, 2022).
- Carnegie Mellon University (Date: February 11, 2022).
- UC Space Sci-Tech Virtual Seminar (Date: October 19, 2021).
- MateriAlZ Virtual Seminar (Date: September 17, 2021).
- ASML Veldhoven (Date: June 30, 2021).
- San Diego Chamber of Commerce (San Diego, CA. Date: February 15, 2021).
- San Diego ASM (San Diego, CA. Date: February 11, 2021).
- NASA Glenn Research Center (Cleveland, OH. Date: January 28, 2021).
- Cornell University (Ithaca, NY. Date: December 4, 2020).
- Colegio Ibero (Tijuana, México. Date: October 30, 2020).
- Rancho del Rey Middle School (Chula Vista, CA. Date: October 21, 2020).
- Colegio La Paz (Tijuana, México. Date: February 7, 2020).
- Instituto México (Tijuana, México. Date: February 7, 2020).
- Mission Bay High School (San Diego, CA. Date: January 29, 2020).
- University of California, Santa Cruz (Santa Cruz, CA. Date: January 23, 2020).
- Universidad Autónoma de Ciudad Juárez (Cd. Juárez, México. Date: January 17, 2020).
- Universidad Politécnica de Sinaloa (Mazatlán, México. Date: January 16, 2020).
- University of California, Irvine (Irvine, CA. Date: November 14, 2019).
- San Diego State University (San Diego, CA. Date: October 24, 2019).
- Howard University (Washington, DC. Date: June 27, 2019).
- U.S. Naval Research Laboratory (Washington, DC. Date: June 26, 2019).
- Universidad Nacional Autónoma de México (Ensenada, México. Date: February 1, 2019).
- Colegio Ibero (Tijuana, México. Date: January 30, 2019).
- Instituto México (Tijuana, México. Date: January 15, 2019).
- Instituto Tecnológico y de Estudios Superiores de Monterrey (Monterrey, México. Date: March 2, 2018).
- Lawrence Livermore National Laboratory (Livermore, CA. Date: February 9, 2018).
- University of California, San Diego, Department of NanoEngineering (La Jolla, CA. Date: January 17, 2018).
- Instituto Tecnológico de Tijuana (Tijuana, México. Date: October 24, 2017).
- Universidad Autónoma de Baja California, Facultad de Pedagogía e Innovación Educativa (Mexicali, México. Date: September 29, 2017).
- Army Research Laboratory (Adelphi, MD. Date: September 20, 2017).
- Universidad Autónoma de Ciudad Juárez (Ciudad Juárez, México. Date: May 12, 2017).
- Universidad Tecnológica de Ciudad Juárez (Ciudad Juárez, México. Date: May 12, 2017).

- Universidad Tecnológica de Tijuana (Tijuana, México. Date: April 20, 2016).
- Universidad Autónoma de Baja California, Escuela de Ciencias de la Ingeniería y Tecnología (Tijuana, México. Date: April 20, 2016).
- Clemson University, Department of Materials Science and Engineering (Clemson, SC. Date: April 8, 2016).
- Universidad Nacional Autónoma de México, Centro de Nanociencia y Nanotecnología (Ensenada, México. Date: March 31, 2016).
- University of California, San Diego, Department of Mechanical and Aerospace Engineering (La Jolla, CA. Date: November 12, 2015).
- Skyworks Corp. (Mexicali, México. Date: July 24, 2015).
- Texas A&M University, Department of Chemistry (College Station, TX. Date: April 28, 2015).
- University of Nevada, Reno, Department of Chemical and Materials Engineering (Reno, NV. Date: April 13, 2015).
- Universidad Nacional Autónoma de México, Centro de Nanociencia y Nanotecnología (Ensenada, México. Date: March 24, 2015).
- University of California, San Diego, Department of Physics (La Jolla, CA. Date: November 26, 2014).
- Yeungnam University, School of Materials Science and Engineering (Gyeongsan, Korea. Date: November 12, 2014).
- University of Louisville, Department of Mechanical Engineering (Louisville, KY. Date: April 28, 2014).
- Universidad Autónoma de Baja California, Facultad de Ciencias Químicas (Tijuana, México. Date: February 27, 2014).
- University of California, Los Angeles, Department of Materials Science and Engineering (Los Angeles, CA. Date: February 21, 2014).
- Universidad Nacional Autónoma de México (Ensenada, México. Date: November 15, 2013).
- Universidad Autónoma de San Luis Potosí (San Luis Potosí, México. Date: September 4, 2013).
- Mexican Consulate in Sacramento (Sacramento, CA. Date: August 22, 2013).
- Air Force Research Laboratory (Dayton, OH. Date: March 14, 2013).
- University of Alabama, Department of Metallurgical and Materials Engineering (Tuscaloosa, AL. Date: March 12, 2013).
- Lawrence Livermore National Laboratory, National Ignition Facility (Livermore, CA. Date: February 25, 2013).
- Instituto Politécnico Nacional, Escuela Superior de Ingeniería Química e Industrias Extractivas (México DF. Date: February 18, 2013).
- University of Nevada, Las Vegas, Department of Mechanical Engineering (Las Vegas, NV. Date: February 7, 2013).
- McGill University, Department of Mining and Materials Engineering (Montreal, Canada. Date: September 28, 2012).
- Centro de Investigaciones en Optica, A.C. (León, México. Date: July 12, 2012).
- University of Nevada, Reno, Department of Chemical and Materials Engineering (Reno, NV. Date: June 1, 2012).

- University of California, Riverside, Department of Mechanical Engineering (Riverside, CA. Date: May 18, 2012).
- Universidad Nacional Autónoma de México, Centro de Nanociencia y Nanotecnología (Ensenada, México. Date: May 4, 2012).
- University of Wisconsin, Madison, Department of Materials Science and Engineering (Madison, WI. Date: April 20, 2012).
- University at Buffalo, Department of Chemistry (Buffalo, NY. Date: March 7, 2012).
- University of California, San Diego, Department of NanoEngineering (La Jolla, CA. Date: March 30, 2012).
- University of California, Davis, Department of Chemical Engineering and Materials Science (Davis, CA. Date: October 25, 2011).
- Universidad Autónoma de Chiapas, Laboratorio de Nuevos Materiales (Tuxtla Gutiérrez, México. Date: May 22, 2011).
- University of New Mexico, Department of Chemical and Nuclear Engineering (Albuquerque, NM. Date: May 3, 2011).
- Rutgers University, Department of Materials Science and Engineering (New Brunswick, NJ. Date: March 8, 2011).
- Georgia Institute of Technology, School of Materials Science and Engineering (Atlanta, GA. Date: February 14, 2011).
- University of Nevada–Reno, Department of Mechanical Engineering (Reno, NV. Date: February 4, 2011).
- Cornell University, Department of Mechanical and Aerospace Engineering (Ithaca, NY. Date: January 28, 2011).
- Columbia University, Department of Applied Physics and Applied Mathematics (New York, NY. Date: October 8, 2010).
- San Diego State University, College of Engineering (San Diego, CA. Date: September 24, 2010).
- University of Texas at San Antonio, Department of Physics and Astronomy (San Antonio, TX. Date: May 6, 2010).
- Rochester Institute of Technology, Department of Chemistry (Rochester, NY. Date: April 6, 2010).
- University of Southern California, Department of Mechanical and Aerospace Engineering (Los Angeles, CA. Date: March 10, 2010).
- Stony Brook University, Department of Materials Science and Engineering (Stony Brook, NY. Date: November 13, 2009).
- University of Rochester, Department of Chemical Engineering (Rochester, NY. Date: September 30, 2009).
- University of Arizona, Department of Materials Science and Engineering (Tucson, AZ. Date: March 23, 2009).
- Missouri University of Science and Technology, Department of Materials Science and Engineering (Rolla, MO. Date: January 28, 2009).
- Corning, Inc. (Corning, NY. Date: November 7, 2008).

- Universidad Nacional Autónoma de México, Instituto de Física Graduate Seminar (México, DF. Date: June 11, 2008).
- Clemson University, School of Materials Science and Engineering Graduate Seminar (Clemson, SC. Date: October 30, 2007).
- Universidad Politécnica de Catalunya, Department of Materials Science (Barcelona, Spain. Date: March 22, 2007).
- Universidad del País Vasco, Department of Inorganic Chemistry (Bilbao, Spain. Date: March 19, 2007).
- University of California–Riverside, Department of Mechanical Engineering (Riverside, CA. Date: October 6, 2006).
- University of California–Irvine, Department of Chemical Engineering and Materials Science (Irvine, CA. Date: November 4, 2005).
- Universidad Nacional Autónoma de México, Centro de Física Aplicada y Tecnología Avanzada (Querétaro, México. Date: January 21, 2005).
- Instituto Politécnico Nacional, Escuela Superior de Ingeniería Química é Industrias Extractivas (México, DF. Date: November 10, 2003).
- Universidad Nacional Autónoma de México, Instituto de Física (México, DF. Date: November 11, 2003).
- Universidad Nacional Autónoma de México, Centro de Ciencias de la Materia Condensada (Ensenada, México. Date: April 11, 2003).
- Instituto Tecnológico de Tijuana, Chemical Engineering Program (Tijuana, México. Date: October 11, 2002).

## POSTERS

- S. Tamakloe, M. Barrera, R. Gomez, and O.A. Graeve, "Inorganic Phosphors for Enhanced LED Performance: A Case Study of $Ca_{4-0.05-x}Sr_xEu_{0.05}LaB_3O_{10}$ ($x$ = 0, 0.5, … 2)," ACS Spring 2025 (San Diego, CA. Date: March 23-27, 2025).
- V.H. Ramos Sanchez, K.I. Mora-Dominguez, C.I. Vargas Consuelos, O.A. Graeve, J.M. Salinas Gutierrez, V.H. Collins Martinez, "Comparing synthetic methods for ceria-based materials for solar fuel production," 24th World Hydrogen Energy Conference (Cancún, México. Date: June 23-27, 2024).
- K.I. Carrera Gutiérrez, O. Graeve, M. Herrera Zaldivar, "Magnetic and Luminescent Nano-hydroxyapatite Doped with $Cr^{3+}$," 31st International Materials Research Congress (Cancún, México. Date: August 13-18, 2023).
- I. Tomac, W. Ma, O.A. Graeve, K. Velázquez Ibarra, J.C. Miranda Martínez, M.F. Suárez Naves, T.A. Rivera Meza, "Assessment of Polycyclic Aromatic Hydrocarbons (PAHs) Content in Post-wildfire Soil and Risk to Human Health," AGU Fall Meeting (Chicago, IL. Date: December 12-16, 2022).
- J.A. Mendoza-Espinoza, O.Y. Alcántar-Ramírez, M.C. Fragoso-Serrano, L.J. Pérez-Flores, and O.A. Graeve, "Synthesis and Characterization of Conjugated Gold Nanoparticles Using *Annona squamosa L.* and *Crhsophyllum*," XXX International Materials Research Congress (Cancún, México. Date: August 14-19, 2022).
- M. Sanchez, K.A. Acord, O.A. Graeve, and L. Rueschhoff, "Oxidation of TaC-HfC Blends Densified by SPS," Solid State Studies in Ceramics Gordon Research Conference (South Hadley, MA. Date: August 7-12, 2022).

- M. Sanchez, K.A. Acord, O.A. Graeve, and L. Rueschhoff, "Oxidation of TaC-HfC Blends Densified by SPS," ECI Ultra-high Temperature Ceramics: Materials for Extreme Environment Applications V (Snowbird, UT. Date: June 5-8, 2022).
- H. Hosseini-Toudeshki, S. Herrera, D. Kisailus, and O. Graeve, "Pseudoelastic Response and Shape Memory Behavior in Ceramic Materials," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- M. Sanchez and O. Graeve, "Ordered Arrangements of $BaTiO_3$ Powders of Cubic Morphologies," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- V. Vakharia and O. Graeve, "Synthesis of High Entropy Metal Carbides by a Solvothermal Process," TMS 149th Annual Meeting & Exhibition (San Diego, CA. Date: February 23-27, 2020).
- E.M. Bullard, I. Torres, T. Ren, G. Kwan, O.A. Graeve, M. Tresguerres, and K. Roy, "Temporal Trends in Shell Calcification of a Foundational Bivalve: Combining Baselines and Short-term Experiments to Understand Species' Responses in a Changing Ocean," Ocean Sciences Meeting 2020 (San Diego, CA. Date: February 16-21, 2020).
- E. Gaona-Carranza, K. Juárez-Moreno, F. Martínez-Pallares, and O.A. Graeve, "Biocompatibility In Vitro Evaluation of Europium-doped Nanohydroxyapatite Scaffolds," International Conference on Nanotechnology Tec.Nano 2018 (Monterrey, México. Date: November 28-30, 2018).
- O.E. Jaime-Acuña, C.I. Vargas-Consuelos, J. Gild, J. Luo, S.T. Misture, D. Edwards, V.R. Vasquez, O. Raymond-Herrera, and O.A. Graeve, "Current Effects on Atomic Displacements and Phonon Dissipation in Hexaboride Materials: A Raman Spectroscopy Study, XI International Conference on Surfaces, Materials and Vacuum (Riviera Maya, México. Date: September 24-28, 2018).
- J. Campbell and O.A. Graeve, "Diffusion Studies of Structurally Amorphous Metal Foils Using Molecular Dynamics Simulation," LAMMPS Workshop and Symposium (Albuquerque, NM. Date: August 1-3, 2017).
- F.Y. Su, P. Shyu, Y.T. Tracy Ling, E. Novitskaya, K. Seo, S. Lambert, K. Zarate, O.A. Graeve, I. Jasiuk, and J. McKittrick, "Comparison of Deproteinization Methods for Porcine Femur Cortical Bone," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- M.B. Frank, C. Ayala, L. Guibert, K. Karandikar, C.-H. Liu, S.H. Siu, O.A. Graeve, and J.M. McKittrick, "Surface Magnetized Hydroxyapatite for Multi-axis Strengthened Bone Implants with Magnetic Freeze Casting," 2017 TMS Annual Meeting & Exhibition (San Diego, CA. Date: February 26 - March 2, 2017).
- S. Choi and O.A. Graeve, "Fabrication of Mesoporous Gold-coated Polystyrene Particles for Enzyme Immobilization," ACS 251st National Meeting (San Diego, CA. Date: March 13-17, 2016).
- F. Su, E.A. Bushong, T.J. Deerinck, K. Seo, S. Herrera, O.A. Graeve, D. Kisailus, V. Lubarda, and J.M. McKittrick, "Spines of the Porcupine Fish: Structure, Composition, and Mechanical Properties," 6th International Conference on Mechanics of Biomaterials and Tissues (Waikoloa, HI. Date: December 6-10, 2015).
- D. Rubio Saavedra, O. Graeve, A. López Suárez, J.A. Chavez-Carvayar, E. Luna Martínez, and S.A. Gamboa, "Synthesis and Characterization of Hexaborides Activated with Nanoparticles for Storing Hydrogen Electrochemically," XXIV International Materials Research Congress (Cancún, México. Date: August 16-20, 2015).
- L.A. Zavala Sánchez, M. Herrera Zaldivar, and O.A. Graeve, "Cathodoluminescence as a Technique for the Determination of Dopant Distribution in Europium-doped Hydroxyapatite," 2015 MRS Spring Meeting & Exhibit (San Francisco, CA. Date: April 6-10, 2015).

- K. Phillips, A. Travis, K. Karandikar, O.A. Graeve, and M. Mecartney, "Multiphase Ceramics for Enhanced Mechanical Properties of Nuclear Fuel," Materials Science and Technology 2014 Conference & Exposition (Pittsburgh, PA. Date: October 12-16, 2014).
- G. Rojas-George, O.A. Graeve, L. Fuentes, and A. Rejes-Rojas, "Rhombohedral Degree of Distortion and Magnetic Properties of Ba-doped $BiFeO_3$," XXIII International Materials Research Congress (Cancún, México. Date: August 17-21, 2014).
- T.Q. Phan, J.P. Kelly, A.M. Hodge, O.A. Graeve, V.E. Eliasson, and M.E. Kassner, "Micromechanical Behavior of Fe-Based Amorphous Alloys," DTRA 2014 Basic Research Technical Review (Springfield, VA. Date: July 28, 2014).
- J.P. Kelly and O.A. Graeve, "Spark Plasma Sintering of Structurally Amorphous Metals: Critical Parameters and Compositing Effects," DTRA 2014 Basic Research Technical Review (Springfield, VA. Date: July 28, 2014).
- K. Phillips, K. Karandikar, A. Travis, O. Graeve, M. Mecartney, "Challenges in the Synthesis of Nanocrystalline, Multiphase Ceramics for Inert Matrix Nuclear Fuel," Gordon Research Conference Solid State Studies in Ceramics (South Hadley, MA. Date: July 20-25, 2014).
- T. Ren and O.A. Graeve, "Solvothermal Process for the Preparation of Doped Ultra-high Temperature Carbide Ceramics," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- S. Qiao and O.A. Graeve, "Synthesis of Magnesium Powders of Unique Morphologies," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- S. Choi, R. Vazquez-Duhalt, and O.A. Graeve, "Fabrication of Mono-sized Hemispherical Mesopores on Gold-coated Polystyrene Particle Surfaces," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- L. Zavala, M. Herrera Zaldivar, G. Hirata Flores, and O.A. Graeve, "Synthesis and Determination of Luminescent Properties of Doped Hydroxyapatites," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- K. Seo and O.A. Graeve, "Morphological Characteristics of Gold/Cobalt Janus Nanoparticles Prepared Using Various Substrates," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- K. Karandikar and O.A. Graeve, "Analysis of Grain Size and Particle Size in Ceramic Powders," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- J.T. Cahill and O.A. Graeve, "Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- H. Fathi-Kelly, J.P. Kelly, and O.A. Graeve, "Fundamental Analysis of Reverse Micelle Stability for Controlled Synthesis of Nanoparticles," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- B. Zhang and O.A. Graeve, "Devitrification Behavior of Amorphous Metal Foils During Spark Plasma Sintering," 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- J.A. Inzana, D. Olvera, S. Fuller, O.A. Graeve, E.M. Schwarz, S.L. Kates, and H.A. Awad, "Design & Characterization of 3D Printed Collagen-Calcium Phosphate Composites for Bone Defect Repair," TERMIS-AM 2013 Annual Conference and Exposition (Atlanta, GA. Date: November 10-13, 2013).

- J.A. Inzana, D. Olvera, S. Fuller, O.A. Graeve, E.M. Schwarz, S.L. Kates, and H.A. Awad, "Characterization of 3D Printed Collagen-Calcium Phosphate Composites for Bone Defect Repair," 8th Combined Meeting of Orthopaedic Research Societies (Venice, Italy. Date: October 13-16, 2013).
- M. Alberga, T. Jin, O.A. Graeve, S. Misture and D. Edwards, "Thermoelectric Properties of Beta-Gallia Rutile Intergrowths," Materials Research Society Fall 2012 Meeting (Boston, MA. Date: November 25-30, 2012).
- M. Alberga, S. Somov, S. Ghosh, J.P. Kelly, and O.A. Graeve, "Novel Composite Interconnect for SOFC," 14th Energy Storage Technology Conference (Rochester, NY. Date: November 14, 2012).
- K. Hadidi, M. Redjdal, E.H. Jordan, O.A. Graeve, and C.M. Brunet, "Uniform Melt State Process (UniMelt$^{TM}$) for the Production of Metastable Nanomaterials," Materials Science & Technology 2012 Conference & Exposition (Pittsburgh, PA. Date: October 7-11, 2012).
- A.D. Lujan, S.D.D.L. Torre, and O.A. Graeve, "Hydroxyapatite Powder Synthesis Prepared by Hydrothermal Method and Consolidation by Spark Plasma Sintering (SPS)," XXI International Materials Research Congress (Cancún, México. Date: August 13-16, 2012).
- H. Fathi, L.E. Jones, and O.A. Graeve, "Modeling and Design of Fe-Based Alloys with Higher Tungsten Content," DTRA 2012 Basic Research Technical Review (Springfield, VA. Date: July 25, 2012).
- M.S. Saterlie, S. Haghighat, A.M. Hodge, and O.A. Graeve, "Processing and Characterization of Iron-Based Amorphous Alloys with Tungsten Nanoparticles," DTRA 2012 Basic Research Technical Review (Springfield, VA. Date: July 25, 2012).
- S. Somov, S. Ghosh, M. Alberga, J.P. Kelly, and O.A. Graeve, "Composite Ceramic Materials for SOFC Components," 4th International Congress on Ceramics (Chicago, IL. Date: July 15-19, 2012).
- M. Alberga, J.P. Kelly, and O.A. Graeve, "Combustion Synthesis of Niobium Doped Titania Powders for Solid Oxide Fuel Cell Interconnect Technology," Discovery: An Undergraduate Showcase (Albany, NY. Date: February 29, 2012).
- J.P. Kelly, M. Alberga, K. Noll, and O.A. Graeve, "Controlled Synthesis of Semiconductor Materials for Energy Applications *via* Combustion and Precipitation Syntheses," Advanced Energy 2011 (Buffalo, NY. Date: October 12-13, 2011).
- O.A. Graeve, "CAREER: Scaled-Up Manufacturing of Nanostructured Refractory Ceramics for High-Temperature Applications," National Science Foundation CMMI Grantees Conference (Atlanta, GA. Date: January 11-14, 2011).
- J.P. Kelly, B.M. Clark, and O.A. Graeve, "Exploring the Preparation of Nanostructured Carbide, Boride, and Nitride Ceramic Powders Using Scalable Solvothermal Reactions," 3$^{rd}$ International Congress on Ceramics (Osaka, Japan. Date: November 16, 2010).
- B. Higgins, D. Edwards, and O.A. Graeve, "Processing of Nano-sized $Al_2(WO_3)_4$ for Electrical Characterization Studies," Materials Science & Technology 2010 Conference & Exposition (Houston, TX. Date: October 19, 2010).
- O.A. Graeve, R. Kanakala, and G. Rojas-George, "Unique Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," 11th International Conference on Advanced Materials (Rio de Janeiro, Brazil. Date: September 21, 2009).
- O.A. Graeve, "CAREER: Scaled-Up Manufacturing of Nanostructured Refractory Ceramics for High-Temperature Applications," National Science Foundation CMMI Grantees Conference (Honolulu, HI. Date: July 20-23, 2009).
- R. Kanakala, G. Rojas-George, and O.A. Graeve, "Novel Synthesis of Nanostructured $LaB_6$ Powders for Hydrogen Storage Applications," US-China Workshop on Nanostructured Materials for Global Energy and Environmental Challenges (Evanston, IL. Date: September 22-24, 2008).

- J. Ruppert and O.A. Graeve, "Development of Mesoporous Scandia-Stabilized Zirconia Powders for Solid-Oxide Fuel Cell Applications," International Conference on Electronic Materials 2008 (Sydney, Australia. Date: July 28 – August 1, 2008).
- S.H. Gleixner, E. Douglas, and O. Graeve, "Engineering Project Laboratory Modules for an Introduction to Materials Course," 2008 ASEE Annual Conference & Exposition (Pittsburgh, PA. Date: June 22-25, 2008).
- O.A. Graeve, R. Kanakala, and G. Rojas-George, "Synthesis of Nanostructured $LaB_6$ Powders for Micro- and Nanosatellite Propulsion Applications," 2008 NanoMaterials for Defense Conference (Arlington, VA. Date: April 21-24, 2008).
- O.A. Graeve, "CAREER: Scaled-Up Manufacturing of Nanostructured Refractory Ceramics for High-Temperature Applications," National Science Foundation CMMI Grantees Conference (Knoxville, TN. Date: January 7-10, 2008).
- V.R. Vasquez, A. Gardner, and O.A. Graeve, "Use of Reverse Micellar Systems for $ZrO_2$ Nanoparticles Synthesis: Dynamic and Equilibrium Studies of the Reverse Micelle Structures Using Molecular Dynamics," Eleventh International Conference on Properties and Phase Equilibria for Product and Process Design (PPEPPD 2007) (Crete, Greece. Date: May 20-25, 2007).
- S.H. Gleixner, E. Douglas, and O. Graeve, "PRIME Modules: Teaching Introduction to Materials Engineering in the Context of Modern Technologies," 2007 ASEE Annual Conference & Exposition (Honolulu, HI. Date: June 25, 2007).
- S.H. Gleixner, E. Douglas, and O. Graeve, "Project-Based Introductory to Materials Engineering Modules on Biomaterials, Solid Oxide Fuel Cells, Non-Volatile Memory, and Fiber Reinforced Plastics," 2006 ASEE Annual Conference & Exposition (Chicago, IL. Date: June 18-21, 2006).
- H. Singh and O.A. Graeve, "Synthesis and Consolidation of Zirconia Nanopowders by the Use of Reverse Micelles," Materials Research Society 2005 Spring Meeting (San Francisco, CA. Date: March 30, 2005).
- E. Lopez, J. Corral, R. Vasquez, O. Rebolledo, O.A. Graeve, and D. Brown, "Analysis of Infrared Spectra of Ethanol and Diethyl Ether Trapped in Yttria Powders Doped with Rare Earth Ions," American Chemical Society Annual Meeting (San Diego, CA. Date: March 14, 2005).
- S.H. Gleixner, E. Douglas, O. Graeve, H. Lackritz, L. Demsetz, and A. Moll, "Development of Project-Based Introductory to Materials Engineering Modules," 2005 ASEE Annual Conference & Exposition (Portland, OR. Date: June 12-15, 2005).

## STUDENT PRESENTATIONS and COMPETITIONS

### ORAL PRESENTATIONS

- L. Vazquez, F. Martinez-Pallares, and O.A. Graeve, "Europium-doped hydroxyapatite for bone healing applications," 36th Annual Undergraduate Research Conference (La Jolla, CA. Date: April 22, 2023).
- R. Gomez, S. Tamakloe, and O.A. Graeve, "Combustion Synthesis of Eu-doped $Ca_{(4-x)}(Sr,Ba)_xLaB_3O_{10}$ Oxyborate Phosphor," The 35th Undergraduate Research Conference (La Jolla, CA. Date: May 14, 2022).
- A. Wilke, J. Metera, and O.A. Graeve, "Bismuth Ferrite Particle Formation Mechanism Using Advanced Morphology Control," The 35th Undergraduate Research Conference (La Jolla, CA. Date: May 14, 2022).
- G. Ontiveros Cortés, K. Zhao, A. Hirales Ahuatzin, E. Novitskaya, and O.A. Graeve, "Thermal Conductivity of Water-based Alumina Nanofluids," UC San Diego's Summer Research Conference (La Jolla, CA. Date: August 12-13, 2021).

- F. Monge, C.I. Vargas-Consuelos, and O.A. Graeve, "A Salt-Assisted Solution Combustion Synthesis of Lanthanum Hexaboride Powders of Cubic Morphologies," 32nd Annual UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: May 18, 2019).
- N. Lam, E. Novitskaya, and O.A. Graeve, "Fine Tuning Light Emission of Doped ZnO," 32nd Annual UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: May 18, 2019).
- C. Bagon, A. Yazdani, and O.A. Graeve, "Experimental Investigation on the Thermal Conductivity of Stabilized $Al_2O_3$-Water Nanofluids," 32nd Annual UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: May 18, 2019).
- E. Alvarado, R.E. Ridley, V.R. Vasquez, and O.A. Graeve, "Reverse Micelle Formation in AOT/etOH/n-heptane System," UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: August 16-17, 2018).
- F. Monge, I. Vargas, and O.A. Graeve, "A Solution Chemistry Process for the Synthesis of Metal Hexaboride Powders of Unique Morphologies," UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: August 16-17, 2018).
- C.N. Guzman, F. Martinez-Pallarez, and O.A. Graeve, "Thermal Stability and Luminescent Properties of Rare Earth-doped Hydroxyapatite," UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: August 16-17, 2018).
- R.D. Ramírez, I. Muñoz, C.I. Vargas-Consuelos, F. Monge, and O.A. Graeve, "Combustion Synthesis of Unique Hexaboride Powders of Cubic Morphologies," ENLACE 2018 Closing Ceremony and Symposium (La Jolla, CA. Date: August 10, 2018).
- F. Monge, I. Vargas, and O.A. Graeve, "A Solution Chemistry Process for the Synthesis of Calcium Hexaboride Powders of Unique Morphologies," UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: May 5, 2018).
- D. Miranda, C.I. Vargas-Consuelos, and O.A. Graeve, "Lanthanum Hexaboride Conducting Wire," 2016 Summer Research Conference (La Jolla, CA. Date: August 11, 2016).
- V. Vakharia, E. Novitskaya, A. Sapre, R. Mukthavaram, M. Makale, and O.A. Graeve, "Size Optimization of YAG:Pr Nanoparticles for Biomedical Applications," 2016 UC San Diego Undergraduate Research Conference (La Jolla, CA. Date: April 23, 2016).
- A. Cota, E. Novitskaya, A. Sapre, R. Mukthavaram, M. Makale, and O.A. Graeve, "Size Optimization of YAG:Pr Nanoparticles Produced by Sol-gel Synthesis for Biomedical Applications," 2015 UCSD Summer Research Conference (La Jolla, CA. Date: August 13, 2015).
- L. Lopez, S. Qiao, and O.A. Graeve, "Soft Template Synthesis of Mesoporous Niobium Doped $TiO_2$," 2015 UCSD Summer Research Conference (La Jolla, CA. Date: August 13, 2015).
- R. Pena and O.A. Graeve, "$Al_2O_3$ and Al Nanofluid Characterization for Heat Transfer Applications," 28th Annual Undergraduate Research Conference (La Jolla, CA. Date: April 25, 2015).
- J.A. Bahena, J.T. Cahill, and O.A. Graeve, "Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," Society of Hispanic Professional Engineers 2014 (Detroit, MI. Date: November 5-9, 2014).
- C.J. Villa, K. Seo, and O.A. Graeve, "Phase Stability and Morphology of $LaNbO_4$ Nanopowders: A Combustion Synthesis Study," Society of Hispanic Professional Engineers 2014 (Detroit, MI. Date: November 5-9, 2014).
- G. Pena, S. Qiao, and O.A. Graeve, "Synthesis of Titanium Powders with Unique Morphologies," 2014 UCSD Summer Research Conference (La Jolla, CA. Date: August 14, 2014).

- C. Villa, K. Seo, and O.A. Graeve, "Phase Stability and Morphology of $LaNbO_4$ Nanopowders: A Combustion Synthesis Study," 2014 UCSD Summer Research Conference (La Jolla, CA. Date: August 14, 2014).
- J. Bahena, J.T. Cahill, and O.A. Graeve, "Preparation of Hexaboride Nanocubes by Combustion Synthesis," 2014 UCSD Summer Research Conference (La Jolla, CA. Date: August 14, 2014).
- J.T. Cahill and O.A. Graeve, "Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," Jacobs Energy Forum (La Jolla, CA. Date: May 7, 2014).
- J.A. Bahena, J.T. Cahill, and O.A. Graeve, "Carbon Steel Bonded Tungsten Carbide: Milling and Spark Plasma Sintering," UCSD Undergraduate Research Conference (La Jolla, CA. Date: April 26, 2014).
- C.J. Villa, K. Seo, and O.A. Graeve, "Phase Stability and Morphology of $LaNbO_4$ Nanopowders: A Combustion Synthesis Study," UCSD Undergraduate Research Conference (La Jolla, CA. Date: April 26, 2014).
- R.M. Pena, J.P. Kelly, and O.A. Graeve, "Alumina Nanofluid Characterization for Heat Transfer Applications: A Dynamic Light Scattering Study," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013). **Ms. Pena won fourth place.**
- J.A. Bahena, J.P. Kelly, M. McKee, Y. Liu, and O.A. Graeve, "Carbon Steel Bonded Tungsten Carbide: Milling and Spark Plasma Sintering," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013).
- C.J. Villa, K. Seo, and O.A. Graeve, "Phase Stability and Morphology of $LaNbO_3$ Nanopowders: A Combustion Synthesis Study," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013).
- P.J. Colmenares, M.S. Saterlie, and O.A. Graeve, "Consolidation and Devitrification Behavior of Iron-based Alloys for Ballistic Applications," Society of Hispanic Professional Engineers 2012 (Fort Worth, TX. Date: November 14-17, 2012).
- S. Escalante, C. Brunet, and O.A. Graeve, "Precipitation Synthesis of Nanocrystalline MgO Powders," Society of Hispanic Professional Engineers 2010 (Cincinnati, Ohio. Date: October 28, 2010).
- O.A. Graeve and K. Sinha, "Dynamic Light Scattering Study of Reverse Micellar Solutions for the Synthesis of Magnetic Nanoparticles," Annual GSA Research Meeting of the University of Nevada – Reno 2008 (Reno, NV. Date: April 18, 2008). **Mr. Sinha won third place and $300 scholarship.**
- B. Pearson, O.A. Graeve, and J. Tinsley, "Synthesis and Densification of $Lu_2SiO_5$:Ce for Gamma-Ray Detection Applications," Society of Hispanic Professional Engineers 2007 (Philadelphia, Pennsylvania. Date: November 2, 2007).
- B. Williams, A. Clifton, and O.A. Graeve, "Reverse Micelle Synthesis and Characterization of Yttria-Stabilized Zirconia Nanoparticles," Society of Hispanic Professional Engineers 2007 (Philadelphia, Pennsylvania. Date: November 1, 2007).
- R. Kanakala, O.A. Graeve, L. Kaufman, B. Pearson, K. Sinha, and J.C. Farmer, "Characterization of Consolidated Iron-Based Structural Amorphous Metals (SAM7) with $Y_2O_3$ Nanoparticle Additions," Society of Hispanic Professional Engineers 2007 (Philadelphia, Pennsylvania. Date: November 2, 2007).
- K. Sinha, B. Pearson, S.R. Casolco, J.E. Garay, and O.A. Graeve, "Synthesis and Consolidation of $Ba_{(1-x)}Eu_xAl_2Si_2O_8$: Development of an Integrated Process for Luminescent Smart Ceramic Materials," Society of Hispanic Professional Engineers 2007 (Philadelphia, Pennsylvania. Date: November 2, 2007).
- G. Rojas-George, B. Williams, D. Peterson, K. Hernandez, and O.A. Graeve, "Reverse Micelle Synthesis and Characterization of $Y_2O_3$:Tm,Yb Nanocrystalline Powders," Society of Hispanic Professional Engineers 2007 (Philadelphia, Pennsylvania. Date: November 1, 2007). **Ms. Hernandez won third place and a $500 scholarship.**

- B. Pearson, O.A. Graeve, and L. Murillo, "Sintered Optical Materials for Shock Physics Applications," Society of Hispanic Professional Engineers 2007 (Philadelphia, Pennsylvania. Date: November 1, 2007).
- B. Williams, G. Rojas-George, and O.A. Graeve, "Synthesis and Characterization of $Y_2O_3$:Eu Nanocrystalline Powders," National Technical and Career Conference 2007 (Denver, CO. Date: January 11, 2007). **Mr. Williams won first place and a $1,000 scholarship.**
- K. Hernández, B. Pearson, K. Sinha, and O.A. Graeve, "Synthesis and Characterization of Luminescent Barium Aluminum Silicate Powders," National Technical and Career Conference 2007 (Denver, CO. Date: January 11, 2007).
- K. Sinha and O.A. Graeve, "Development of Smart Magnetic Fluids for Nano/Micro Applications," National Technical and Career Conference 2007 (Denver, CO. Date: January 12, 2007). **Mr. Sinha won second place and a $750 scholarship.**
- K. Sinha and O.A. Graeve, "Synthesis of Iron Oxide Nanoparticles for Biomedical Applications," Society of Hispanic Professional Engineers 2005 National Technical and Career Conference (Dallas, TX. Date: January 6, 2005).
- J.O. Corral and O.A. Graeve, "Preparation of Rare-Earth Doped $Y_2O_3$ Luminescent Ceramics by the Use of Reverse Micelles," Society of Hispanic Professional Engineers 2005 National Technical and Career Conference (Dallas, TX. Date: January 6, 2005).
- J.O. Corral and O.A. Graeve, "Preparation of Rare-Earth ($Eu^{3+}$, $Tm^{3+}$, $Yb^{3+}$ and $Tb^{3+}$) Doped $Y_2O_3$ Luminescent Ceramics," MAES (Mexican American Engineers and Scientists Society) Symposium (Austin, TX. Date: October 28, 2004). **Ms. Corral won second place and a $2,000 scholarship.**
- J.O. Corral and O.A. Graeve, "Synthesis of $Ti_3SiC_2$ Nanocrystalline Ductile Ceramic by High Energy Ball Milling," Society of Hispanic Professional Engineers 2004 National Technical and Career Conference (Chicago, IL. Date: January 8, 2004).
- J.O. Corral and O.A. Graeve, "Synthesis of a Ductile $Ti_3SiC_2$ Ceramic by High-Energy Ball Milling," Mexican American Engineers and Scientists Society Symposium (Phoenix, AZ. Date: October 30, 2003). **Ms. Corral won second place and a $2,000 scholarship.**

**POSTERS**

- C.I. Martinez-Cruz and O.A. Graeve, "$LaNbO_4$-$V_2O_5$ phase stability," Research Expo 2024 (La Jolla, CA. Date: April 17, 2024).
- V.S. Vakharia, O. Perez, C. Kim, J. Liu, L. Zhang, E. Rodas-Lima, C. Park, E. Torresani, E. Olevsky, and O.A. Graeve, "Processing of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature, Irradiation Resistant Ceramics," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).
- S. Ortega, M. Callahan, and O.A. Graeve, "Effects of Metal Dopants on Morphology of TaC Nanoparticles," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).
- S. Estrada, R. Chavez, and O.A. Graeve, "Morphology Control of Doped Hafnium Carbide Powders," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).
- J. Metera, A. Wilke, and O.A. Graeve, "Novel Method of $BiFeO_3$ Purification by Acid Washing Through Timed and Concentration ICP-MS Studies," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).
- F.J. Suarez, R. Vazquez-Duhalt, and O.A. Graeve, "Immobilization of Laccases on CuO and ZnO Nanoparticles: Catalytic Properties and Activity Recovery," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).
- C.I. Martinez-Cruz and O.A. Graeve, "Freeze Casting of $LaNbO_4$ Bulk Shape Memory Ceramics," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).

- A. Hirales, V.R. Vasquez, and O.A. Graeve, "Advanced Materials for Neutron Detection Applications: Design and Synthesis of Alkaline-Earth Doped Hexaborides," Research Expo 2023 (La Jolla, CA. Date: April 26, 2023).
- J. Metera, A. Wilke, and O.A. Graeve, "Particle Formation Mechanism of Bismuth Ferrite: Materials by Design for Antiferromagnetic and Ferroelectric Applications," Research Expo 2022 (La Jolla, CA. Date: April 14, 2022).
- A. Hirales, V.R. Vasquez, and O.A. Graeve, "Structural and Compositional Analysis of Calcium and Strontium Hexaborides With Lithium Addition," Research Expo 2022 (La Jolla, CA. Date: April 14, 2022).
- F. Martinez, K. Juárez-Moreno, M. Herrera, and O.A. Graeve, "*In Vitro* Osteoblast Cell Differentiation by Rare-Earth Doped Hydroxyapatite," Research Expo 2022 (La Jolla, CA. Date: April 14, 2022).
- S. Ortega, J. Dong, J. Doan, K. Siraj, and O.A. Graeve, "Tailored Morphology of TaC Nanoparticles by Introduction of Transition Metal Dopants," Research Expo 2022 (La Jolla, CA. Date: April 14, 2022).
- F.J. Suarez, S. Ojeda-Santillán, R. Vazquez-Duhalt, and O.A. Graeve, "Immobilization and Catalytic Properties of Laccase on CuO Nanoparticles," Research Expo 2022 (La Jolla, CA. Date: April 14, 2022).
- S. Estrada, R. Chavez, and O.A. Graeve, "Morphology Control of Doped Hafnium Carbide Powders," Research Expo 2022 (La Jolla, CA. Date: April 14, 2022).
- G. Ontiveros Cortes, K. Zhao, A. Hirales Ahuatzin, E. Novistkaya, and O.A. Graeve, "Thermal Conductivity of Water-based Alumina Nanofluids," Online Undergraduate Research Symposium (Date: May 26, 2021).
- V.S. Vakharia, L. Zhang, S. Sufy, and O.A. Graeve, "Solvothermal Synthesis of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature, Irradiation Resistant Ceramics," Research Expo 2021 (La Jolla, CA. Date: May 19, 2021).
- J. Metera, A. Wilke, and O.A. Graeve, "Particle Formation Mechanism of Bismuth Ferrite Particles: Materials by Design for Antiferromagnetic and Ferroelectric Applications," Research Expo 2021 (La Jolla, CA. Date: May 19, 2021).
- M. Sanchez and O.A. Graeve, "Synthesis of Perovskite Materials with Cubic Particle Morphologies for Ordered Arrangements," Research Expo 2021 (La Jolla, CA. Date: May 19, 2021).
- F. Martinez, M. Herrera, E. Novitskaya, and O.A. Graeve, "Solubility Study of Luminescent Hydroxyapatite Scaffolds for Prospective Bone Healing Applications," Research Expo 2021 (La Jolla, CA. Date: May 19, 2021).
- F. Javier Suarez, R. Vazquez-Duhalt, and O.A. Graeve, "Enhancing Catalytic Properties of Laccase by its Immobilization of Copper (II) Oxide Nanoparticles," Research Expo 2021 (La Jolla, CA. Date: May 19, 2021).
- H. Chen and O.A. Graeve, "Combustion Synthesis and Sol-gel Reaction of Novel Efficient Red-emitting Phosphors," Research Expo 2021 (La Jolla, CA. Date: May 19, 2021).
- M. Sanchez, "Development of Cubic Morphologies of Perovskite Materials for Enhanced Creep Resistance," ASML PhD Symposium (San Diego, CA. Date: April 29, 2021).
- A Yazdani, D. Dewitt, S.T. Misture, J.E. Garay, and O.A. Graeve, "SAM2X5: Stronger than the Strongest Steel," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- F. Martínez, E. Gaona, M. Herrera-Zaldivar, K. Juárez-Moreno, and O.A. Graeve, "Differentiation Assay of Osteoblast Cells in Luminescent Hydroxyapatite," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).

- H. Hosseini-Toudeshki, K. Seo, J. Gild, J. Luo, S.A. Herrera, D. Kisailus, and O.A. Graeve, "Superelastic Response and Shape Memory Behavior in Ceramic Materials," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- C.I. Vargas Consuelos, F. Monge, A. Yazdani, and O.A. Graeve, "DSC Studies of the Combustion Synthesis of $LaB_6$ and $CeB_6$: The Effect of KCl and LiCl Addition," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- I. Torres and O.A. Graeve, "Bioinspired Stimuli-Responsive Coloration Through the Cephalopod Lens: A Literature Review," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- J. Campbell, C. Ruestes, and O.A. Graeve, "Diffusion Studies of Structurally Amorphous Metal Foils Using Molecular Dynamics Simulations: Diffusion Coefficients and Connection to Macro-properties," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- M. Sánchez and O.A. Graeve, "Synthesis Methods of $BaTiO_3$ with Cubic Morphology: A Literature Review," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- R.E. Ridley, E. Alvarado, V.R. Vasquez, and O.A. Graeve, "Phase Stability and Miscibility in Alcohol Microemulsions: Do Reverse Micelles Form in Ethanol/AOT/*n*-Heptane Systems?," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- V. Vakharia and O.A. Graeve, "Solvothermal Synthesis Approach of High Entropy Metal Carbides: A New Class of Ultrahigh Temperature, Irradiation Resistant Ceramics," Research Expo 2019 (La Jolla, CA. Date: April 18, 2019).
- C.A. Calderón, M.E. Aguilar, A. Yazdani, and O.A. Graeve, "The Effect of Nanoparticle Concentration on the Thermal Conductivity of Alumina Nanofluids," ENLACE 2018 Closing Ceremony and Symposium (La Jolla, CA. Date: August 10, 2018).
- S. Choi, R. Vazquez-Duhalt, and O.A. Graeve, "Fabrication of Uniform-sized Mesopores on Gold-coated Polystyrene Particles," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- M. Sanchez and O.A. Graeve, "Synthesis of Cubic Microstructures of Perovskite Materials," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- R. Ridley and O.A. Graeve, "Advances in Ionic Polymer Metal Composites (IPMCs): A Literature Review," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- A. Yazdani, D. Dewitt, J.E. Garay, and O.A. Graeve, "SAM 2x5: Stronger than the Strongest Steel," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- F. Martinez, K. Juárez-Moreno, and O.A. Graeve, "In Vitro Evaluation of Luminescent Rare-earth Doped Hydroxyapatite Scaffolds," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- J. Campbell, C. Ruestes, and O.A. Graeve, "Diffusion Studies of Structurally Amorphous Metal Foils Using Molecular Dynamics Simulation: Initial Simulation Framework Validation," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- H. Hosseini-Toudeshki, S. Herrera, D. Kisailus, and O.A. Graeve, "Super-elastic Response and Shape Memory Behavior in Ceramic Materials," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- C.I. Vargas-Consuelos and O.A. Graeve, "Cubic Hollow Nanostructures: A New Trend to Design Functional Materials," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- T. Ren and O.A. Graeve, "Exploring the Fundamental Behavior of Tailored Nanoscale Carbide Morphologies: Materials by Design for Ultra-high Temperature Applications," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- K. Seo and O.A. Graeve, "Synthesis and Interface Boundary Characteristics of Gold/Cobalt Janus Nanoparticles," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).

- S. Qiao, E. Novitskaya, F. Sanchez, M. Herrera Zaldivar, R. Vazquez-Duhalt, and O.A. Graeve, "Electrical Conductivity of Stabilized Mesoporous Ceramic Fluid Suspensions with Varying pH Values," Research Expo 2018 (La Jolla, CA. Date: April 19, 2018).
- R. Ridley, V.R. Vasquez, and O.A. Graeve, "Fluidic Interactions in AOT/n-Heptane Systems: The Effect of Short-Chain Alcohols," ASME 2018 Mechanical Engineering Education Leadership Summit (San Diego, CA. Date: March 14-17, 2018).
- T. Ren and O.A. Graeve, "Exploring the Fundamental Behavior of Tailored Nanoscale Carbide Morphologies: Materials by Design for Ultra-high Temperature Applications," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- R.E. Ridley and O.A. Graeve, "Effects of Ethanol on AOT/n-heptane Reverse Micelle Systems," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- C.I. Vargas Consuelos, D. Miranda, and O.A. Graeve, "Controlling the Shape and Particle Size of $LaB_6$ Nanostructures: A Step Towards Developing New Composite Materials," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- S. Qiao, E. Novitskaya, F. Sanchez, R. Vazquez-Duhalt, and O.A. Graeve, "Thermal and Electrical Conductivities of Mesoporous Nanofluids and Applications for Enzyme Catalysis," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- F. Martinez, M. Herrera, and O.A. Graeve, "In Vitro Evaluation of Luminescent Rare-earth Doped Hydroxyapatite Scaffolds," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- S. Choi and O.A. Graeve, "Fabrication of Mesopores on Gold-coated Polystyrene Particles," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- J. Campbell and O.A. Graeve, "Diffusion Studies of Structurally Amorphous Metal Foils Using Molecular Dynamics Simulation," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- U. Perez and O.A. Graeve, "Fabrication and Characterization of Complex SiC/SiC Fiber Composite Processed by Spark Plasma Sintering," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- K. Seo and O.A. Graeve, "Synthesis and Interface Boundary Characteristics of Gold/Cobalt Janus Nanoparticles," Research Expo 2018 (La Jolla, CA. Date: April 20, 2017).
- E. Novitskaya, H. Khalifa, A. Kritsuk, and O.A. Graeve, "Optimization of Complex Silicon Carbide Structures for Nuclear Applications," Postdoc Research Symposium (La Jolla, CA. Date: November 1, 2016).
- K. Karandikar and O.A. Graeve, "Correlation between particle size and grain size distributions in single/multiphase ceramics," CaliBaja Center for Resilient Materials and Systems Research Summit (La Jolla, CA. Date: October 20, 2016).
- E. Novitskaya and O.A. Graeve, "Optimization of complex silicon carbide structures for nuclear applications," CaliBaja Center for Resilient Materials and Systems Research Summit (La Jolla, CA. Date: October 20, 2016).
- T. Ren and O.A. Graeve, "Solvothermal Process for the Preparation of Doped Ultra-High Temperature Ceramics with Unique Morphologies," CaliBaja Center for Resilient Materials and Systems Research Summit (La Jolla, CA. Date: October 20, 2016).
- K. Seo and O.A. Graeve, "Morphological characteristics of gold/cobalt Janus nanoparticles: Interface study in synthesis methods," CaliBaja Center for Resilient Materials and Systems Research Summit (La Jolla, CA. Date: October 20, 2016).
- S. Qiao and O.A. Graeve, "Electrically-conductive mesoporous ceramics for enzyme catalysis," CaliBaja Center for Resilient Materials and Systems Research Summit (La Jolla, CA. Date: October 20, 2016).

- E. Novitskaya, H. Khalifa, A. Kritsuk, and O.A. Graeve, "Optimization of Complex Silicon Carbide Structures for Nuclear Applications," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3, 2016).
- K.K. Karandikar, O.A. Graeve, K. Ohtaki, A. Travis, and M. Mecartney, "Particle Size and Grain Size Distributions in Single/Multiphase Ceramics," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3, 2016).
- J.T. Cahill and O.A. Graeve, "Synthesis of Metal Hexaborides and the Prospect of Controllable Diffusion," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3, 2016).
- S. Choi and O.A. Graeve, "Fabrication of Mesoporous Gold-Coated Polystyrene Particles for Enzyme Immobilization," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3, 2016).
- J. Ha, E. Novitskaya, O.A. Graeve, G.A. Hirata, and J.M. McKittrick, "A Method to Improve Quantum Efficiency of Nanosized Phosphors for Near-UV LEDs," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3, 2016).
- S. Qiao, E. Novitskaya, F. Sanchez, R. Vazquez-Duhalt, and O.A. Graeve, "Electrically-Conductive Mesoporous Ceramics for Enzyme Catalysis," Ceramics for Energy Workshop (La Jolla, CA. Date: June 3, 2016).
- J. Ha, E. Novitskaya, O.A. Graeve, G.A. Hirata, and J.M. McKittrick, "A Method to Improve Quantum Efficiency of Nanosized Phosphors for Near-UV LEDs," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- M.B. Frank, S.H. Siu, J. Ng, A. Ismail, I. Torres, T. Haroush, C.-H. Liu, K. Karandikar, S. Naleway, O.A. Graeve, and J.M. McKittrick, "Magnetized Materials for Bioinspired Bone Scaffolds," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- K. Seo and O.A. Graeve, "Morphological Characteristics and Interfaces of Gold/Cobalt Janus Nanoparticles," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- S. Choi and O.A. Graeve, "Fabrication of Mesoporous Gold-Coated Polystyrene Particles for Enzyme Immobilization," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- K.K. Karandikar, O.A. Graeve, K. Ohtaki, A. Travis, and M. Mecartney, "Particle Size and Grain Size Distributions in Single/Multiphase Ceramics," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- T. Ren, V. Stanley, and O.A. Graeve, "Solvothermal Process for the Preparation of Doped Ultra-high Temperature Carbide Ceramics with Unique Morphologies," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- S. Qiao, E. Novitskaya, F. Sanchez, R. Vazquez-Duhalt, and O.A. Graeve, "Electrically-Conductive Mesoporous Ceramics for Enzyme Catalysis," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- J.T. Cahill and O.A. Graeve, "Synthesis of Metal Hexaborides and the Prospect of Controllable Diffusion," UCSD Jacobs School of Engineering 35th Annual Research Expo (La Jolla, CA. Date: April 14, 2016).
- E. Novitskaya, H. Khalifa, and O.A. Graeve, "Characterization of Complex Silicon Carbide Composite Structures," 3rd Annual Postdoctoral Research Symposium (La Jolla, CA. Date: September 14, 2015).
- J.P. Kelly, M. Alberga, B. Wang, S. Fuller, H. Fathi-Kelly, D. Edwards, O.A. Graeve, "Incorporating Materials Synthesis and Processing History into Development and Property Optimization Models," 8th Annual Postdoc Poster Symposium (Livermore, CA. Date: June 17, 2015).

- J. Ha, Z. Wang, E. Novitskaya, O.A. Graeve, S.P. Ong, and J.M. McKittrick, "Development of Phosphors for Solid-state Lighting," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- K. Karandikar and O.A. Graeve, "Correlation Between Particle Size and Grain Size Distributions in Single/Multiphase Ceramics," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- J.T. Cahill and O.A. Graeve, "Using Tool Steel in Metal-Ceramic Hardmetal Composites," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- B. Zhang and O.A. Graeve, "Devitrification Behavior of Amorphous Metal Foils During Spark Plasma Sintering," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- S. Choi and O.A. Graeve, "Fabrication of Mono-sized Mesopores on Gold-coated Polystyrene Particle Surfaces for Enzyme Immobilization," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- K. Seo and O.A. Graeve, "Morphological Characteristics of Gold/Cobalt Janus Nanoparticles," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- T. Ren and O.A. Graeve, "Exploring the Fundamental Behavior of Tailored Nanoscale Carbide Morphologies: Materials by Design for Ultra-high Temperature Applications," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- S. Qiao and O.A. Graeve, "Electrically-conductive Mesoporous Ceramics for Biocatalysis Applications," UCSD Jacobs School of Engineering 32nd Annual Research Expo (La Jolla, CA. Date: April 16, 2015).
- J. Bahena and O.A. Graeve, "Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," 2015 CAMP Statewide Research Symposium (Irvine, CA. Date: February 6-7, 2015). **Mr. Bahena received honorable mention.**
- C. Villa and O.A. Graeve, "Phase Stability and Morphology of $LaNbO_4$ Nanopowders: A Combustion Synthesis Study," 2015 CAMP Statewide Research Symposium (Irvine, CA. Date: February 6-7, 2015).
- G. Pena, S. Qiao, and O.A. Graeve, "Synthesis of Titanium Powders with Unique Morphologies," Society of Hispanic Professional Engineers 2014 (Detroit, MI. Date: November 5-9, 2014).
- J.P. Kelly, E. Novitskaya, and O.A. Graeve, "Bulk Metallic Glass Composites – Breaking Design Barriers (Instead of the Glass)," UCSD Postdoctoral Research Symposium (La Jolla, CA. Date: September 26, 2014).
- E. Novitskaya, M. Herrera-Zaldivar, G. Hirata-Flores, and O.A. Graeve, "Advanced Triboluminescent Coatings for Structural Health Monitoring Applications," UCSD Postdoctoral Research Symposium (La Jolla, CA. Date: September 26, 2014).
- J.A. Bahena, J.P. Kelly, M. McKee, Y. Liu, and O.A. Graeve, "Tungsten Carbide / Steel Composites: Milling and Spark Plasma Sintering Studies," SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 18, 2014). **Mr. Bahena won first place and a laptop.**
- R. Pena and O.A. Graeve, "Alumina Nanofluid Characterization for Heat Transfer Applications: A Dynamic Light Scattering Study," SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 18, 2014). **Ms. Pena won third place and an HP scientific calculator.**
- C. Villa, K. Seo, and O.A. Graeve, "Phase Stability and Morphology of $LaNbO_4$ Nanopowders: A Combustion Synthesis Study," SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 18, 2014).

- B. Zhang and O.A. Graeve, "Devitrification Behavior of Amorphous Metal Foils During Spark Plasma Sintering," Jacobs School of Engineering 33rd Annual Research Expo (La Jolla, CA. Date: April 17, 2014).
- J.T. Cahill and O.A. Graeve, "Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," Jacobs School of Engineering 33rd Annual Research Expo (La Jolla, CA. Date: April 17, 2014).
- K. Karandikar and O.A. Graeve, "Analysis of Grain Size and Particle Size in Ceramic Powders," Jacobs School of Engineering 33rd Annual Research Expo (La Jolla, CA. Date: April 17, 2014).
- K. Seo and O.A. Graeve, "Morphological Characteristics of Gold/Cobalt Janus Nanoparticles Prepared Using Various Substrates," Jacobs School of Engineering 33rd Annual Research Expo (La Jolla, CA. Date: April 17, 2014).
- S. Choi, R. Vazquez-Duhalt, and O.A. Graeve, "Fabrication of Mono-sized Hemispherical Mesopores on Gold-coated Polystyrene Particle Surfaces," Jacobs School of Engineering 33rd Annual Research Expo (La Jolla, CA. Date: April 17, 2014).
- T. Ren and O.A. Graeve, "Solvothermal Process for the Preparation of Doped Ultra-high Temperature Carbide Ceramics," Jacobs School of Engineering 33rd Annual Research Expo (La Jolla, CA. Date: April 17, 2014).
- J.T. Cahill and O.A. Graeve, "Preparation of Hexaboride Nanocubes for Hydrogen Storage Applications," PerkinElmer & SFU Nanolytica 2014 Educational Symposium (La Jolla, CA. Date: April 11, 2014).
- R. Pena, J.P. Kelly, and O.A. Graeve, "Alumina Nanofluid Characterization for Heat Transfer Applications: A Dynamic Light Scattering Study," 2014 University of California LSAMP (CAMP) Statewide Undergraduate Research Symposium (Irvine, CA. Date: February 7-9, 2014). **Ms. Pena received Honorable Mention in the Physical Sciences & Engineering Category.**
- J.A. Duenas, J.T. Cahill, and O.A. Graeve, "Determination of Phase Stability During the Combustion Synthesis of Bismuth Ferrite Powders," Society of Hispanic Professional Engineers 2013 (Indianapolis, IN. Date: October 30 – November 3, 2013).
- H. Fathi, J.P. Kelly, and O.A. Graeve, "Fundamental Analysis of Reverse Micelle Stability for the Synthesis of Nanopowders," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 19, 2012).
- M.S. Saterlie, J. Liu, S. Misture, D. Edwards, and O.A. Graeve, "New Facile Synthesis Route of Beta-Gallia Rutile Structured Intergrowths for High Temperature Applications," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 19, 2012).
- J.P. Kelly, B.M. Clark, R.J. Grohsmeyer, R.J. Locker, A.W. Turner, and O.A. Graeve, "Microstructural Development During Spark Plasma Sintering of Tantalum Carbide Powders Prepared by Solvothermal Synthesis," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 19, 2012).
- B.M. Clark, J.P. Kelly, and O.A. Graeve, "Chemical Treatments of Tantalum Carbide Powder to Manipulate Morphology and Particle Size," Undergraduate Research Forum (Alfred, NY. Date: April 19, 2012).
- K. Lambert, J.P. Kelly, and O.A. Graeve, "The Effect of Silica on the Fabrication of Translucent Polycrystalline Lutetium Orthosilicate for γ-Ray Detection Applications," Undergraduate Research Forum (Alfred, NY. Date: April 19, 2012).
- R.J. Grohsmeyer, J.P. Kelly, B.M. Clark, and O.A. Graeve, "Unique Processing and Properties Characterization of Dense Tantalum Carbide Ceramics," Undergraduate Research Forum (Alfred, NY. Date: April 19, 2012).
- K.E. Noll, J.P. Kelly, and O.A. Graeve, "Spark Plasma Sintering of Zinc Oxide Prepared by Combustion Synthesis," Undergraduate Research Forum (Alfred, NY. Date: April 19, 2012).

- M. Alberga, J.P. Kelly, and O.A. Graeve, "Synthesis of Doped and Undoped Titania Nanopowders for Use in SOFC Interconnect and Thermoelectric Applications," Undergraduate Research Forum (Alfred, NY. Date: April 19, 2012).
- D.W. Davies, J.P. Kelly, and O.A. Graeve, "A Unique Process for the Preparation of Boron Nitride Powders," Undergraduate Research Forum (Alfred, NY. Date: April 19, 2012).
- J.P. Kelly, B.M. Clark, R. Kanakala, and O.A. Graeve, "Pathway to the Scaled-Up Manufacturing of Nanostructured Ultra-high Temperature Refractory Ceramics," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 27, 2011).
- M. Saterlie and O.A. Graeve, "Aqueous Combustion Synthesis of Beta-Gallia Rutile Structured Intergrowths," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 27, 2011).
- H. Fathi and O.A. Graeve, "Fundamental Aspects of Reverse Micelle Stability for Controlled Synthesis of Nanoparticles," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 27, 2011).
- C. Brunet and O.A. Graeve, "Novel Processing of IR Transparent Nanocrystalline Ceramics," AU MRS Scholes Poster Competition (Alfred, NY. Date: April 27, 2011).
- B. Clark, J.P. Kelly, and O.A. Graeve, "Preparation of Nanostructured Non-Oxide Ceramic Powders Using Solvothermal Reactions," Undergraduate Research Forum (Alfred, NY. Date: April 14, 2011).
- P.J. DiCesare and O.A. Graeve, "Spark Plasma Sintering of Highly Corrosion-Resistant Amorphous Metal/Ceramic Composites," Undergraduate Research Forum (Alfred, NY. Date: April 22, 2010).
- A.D. Galens and O.A. Graeve, "The Synthesis and Characterization of $EuB_6$ Nanopowders," Undergraduate Research Forum (Alfred, NY. Date: April 22, 2010).
- C.M. Brunet and O.A. Graeve, "Synthesis of Nanocrystalline Tantalum Powders," Alfred University Senior Poster Night (Alfred, NY. Date: December 2, 2009).
- K.C. Glass and O.A. Graeve, "A Comparative Analysis of Particle Size and Crystallite Size in Alumina Nanopowders Prepared by Reverse Micelle Synthesis," Alfred University Senior Poster Night (Alfred, NY. Date: December 2, 2009).
- K. Sinha, B. Kavlicoglu, Y. Liu, and O.A. Graeve, "Development of Nanoscale Magneto-Rheological (nMR) Fluid: Effect of Particle Size on Flow and Thermal Characteristics through Microchannels," Annual GSA Research Meeting of the University of Nevada – Reno 2008 (Reno, NV. Date: April 14, 2008). **Mr. Sinha won second place and a $500 scholarship.**
- M. Saterlie, R. Kanakala, L. Kaufman, J.C. Farmer, B. Pearson, K. Sinha, and O.A. Graeve, "Spark Plasma Sintering of Fe-Based Structural Amorphous Metals (SAM) with $Y_2O_3$ Nanoparticle Additions," Summer 2007 Undergraduate Research Opportunities Program Poster Session (Reno, NV. Date: August 15, 2007).
- K. Sinha, B. Pearson, S. Robles-Casolco, J.E. Garay, and O.A. Graeve, "Synthesis and Consolidation of Barium Aluminum Silicate Doped With Europium (BAS:Eu): An Approach to Develop Smart Ceramic Skins for Structural Health Monitoring Systems," Annual GSA Research Meeting of the University of Nevada – Reno 2007 (Reno, NV. Date: April 16, 2007). **Mr. Sinha won first place and a $650 scholarship.**
- B. Williams, A. Clifton, K. Sinha, and O.A. Graeve, "Synthesis and Characterization of Nanocrystalline Yttria-Stabilized Zirconia," Spring 2007 UNR Undergraduate Research Conference (Reno, NV. March 8, 2007).
- B. Pearson, O.A. Graeve, and J. Tinsley, "Processing of Luminescent Ceramics for Gamma-Ray Detection," Spring 2007 UNR Undergraduate Research Conference (Reno, NV. Date: March 8, 2007).

- D. Peterson, K. Sinha, and O.A. Graeve, "Surfactant-Assisted Synthesis of Magnetic Nanoparticles," Spring 2007 UNR Undergraduate Research Conference (Reno, NV. Date: March 8, 2007).
- G. Rojas-George, D. Peterson, K. Sinha, B. Williams, and O.A. Graeve, "Synthesis and Characterization of Luminescent Yttria Powders," Spring 2007 UNR Undergraduate Research Conference (Reno, NV. Date: March 8, 2007).
- K. Sinha and O.A. Graeve, "Reverse Micelle Synthesis of Magnetic Nanoparticles," Annual GSA Research Meeting of the University of Nevada – Reno 2006 (Reno, NV. Date: April 17, 2006). **Mr. Sinha won first place and a $650 scholarship.**
- J. Corral and O.A. Graeve, "Synthesis of $Ti_3SiC_2$ Nanocrystalline Ductile Ceramic by High Energy Ball Milling," Northern California Section of the American Ceramic Society Annual Poster Competition and Dinner Meeting (Davis, CA. Date: May 5, 2004).
- H. Singh and O.A. Graeve, "Reverse Micelle Synthesis of Zirconia Nanopowders," Northern California Section of the American Ceramic Society Annual Poster Competition and Dinner Meeting (Davis, CA. Date: May 5, 2004). **Mr. Singh won first place and a $300 scholarship.**
- S. Varma and O.A. Graeve, "Combustion Synthesis and Characterization of $Y_2O_3$:Tm,Yb Blue Phosphors," Northern California Section of the American Ceramic Society Annual Poster Competition and Dinner Meeting (Davis, CA. Date: May 5, 2004). **Ms. Varma won second place and a $200 scholarship.**

## PROFESSIONAL ACTIVITIES

### CONFERENCES and SYMPOSIA ORGANIZED

- *Chair*. 2024 MATS Symposium and Workshop: Innovations for a Changing Environment (La Jolla, CA. Date: July 23-26, 2024).
- *Member*. Scientific Committee, 2nd Conference on FAST/SPS: From Research to Industry (Warsaw, Poland. Date: October 16-18, 2023).
- *Member*. International Advisory Board, Sintering 2023 (Gifu, Japan. Date: August 27-31, 2023).
- *Chair*. IV CaliBaja Symposium and Workshop (La Jolla, CA. Date: April 21, 2023).
- *Co-chair*. ACerS-MRS Virtual Workshop – Ceramic Materials in Extreme Environments: New Processing Tools and Data-Driven Approaches (Date: March 8-9, 2023).
- *Chair*. Materials in Extreme Environments: New Monitoring Tools and Data-Driven Approaches; a Workshop presented by the National Academies' Condensed Matter and Materials Research Committee, under the auspices of the Board on Physics and Astronomy (Washington, DC. Date: October 5-6, 2022).
- *Chair*. 3rd CaliBaja Symposium and Workshop (La Jolla, CA. Date: June 20, 2022).
- *Member of the Scientific Committee*. 1st Conference on FAST/SPS: From Research to Industry (Poznan, Poland. Date: October 25-26, 2021).
- *Member of the Scientific Committee*. 2021 IACM Mechanistic Machine Learning & Digital Twins for Computational Science, Engineering and Technology Conference (San Diego, CA. Date: September 26-29, 2021).
- *Member of the International Advisory Board*. Sintering 2021 (Gifu, Japan. Date: March 27-31, 2021).
- *Co-chair*. Track 8: Mechanistic Data Science for High School and Undergraduate STEM Education and Applications, Mechanistic Machine Learning and Digital Twins for Computational Science, Engineering & Technology (MMLDT-CSET 2021) (San Diego, CA. Date: September 26-29, 2021).

- *Member of the Scientific Committee*. III National Workshop on Spark Plasma Sintering (Kraków, Poland. Date: October 23, 2020).
- *Symposium Co-chair*. Challenges in Materials and Technologies for Energy Conversion, Saving and Storage (MATECSS), 28th International Materials Research Congress (Cancún, México. Date: August 18-23, 2019).
- *Chair*. 2nd CaliBaja Symposium and Workshop (La Jolla, CA. Date: May 3, 2019).
- *Symposium Co-chair*. High Impact Practice-Increasing Ethnic and Gender Diversification in Engineering Education, 2019 MRS Spring Meeting & Exhibition (Phoenix, AZ. Date: April 22-26, 2019).
- *Member of the International Advisory Board*. XI Simposio Internacional: Investigación Química en la Frontera (Tijuana, México. Date: November 14-16, 2018).
- *Member of the Steering Committee*. Bridging Chasms Event (La Jolla, CA. Date: September 21-23, 2018).
- *Co-Chair*. Materials and Technologies for Energy Conversion, Saving and Storage (MATECSS), XXVII International Materials Research Congress (Cancun, Mexico. Date: August 19-24, 2018).
- *Member of the Scientific Committee*. 7th International Congress on Ceramics (Iguacu Falls, Brazil. Date: June 17-21, 2018).
- *Member of International Advisory Board*. 14th International Ceramics Congress (Salsomaggiore Terme, Italy. Date: June 4-8, 2018).
- *Chair*. 1st CaliBaja Symposium and Workshop: Advances and Collaborations in Microscopy (Tijuana, Mexico. Date: February 15-16, 2018).
- *Member of International Advisory Board*. Sintering 2017 (San Diego, CA. Date: November 12-16, 2017).
- *Co-Chair*. Mentoring Young Scientists: Developing Survival Skills Tutorial (Cancun, Mexico. Date: August 20-25, 2017).
- *Co-Chair*. Materials and Technologies for Energy Conversion, Saving and Storage (MATECSS), XXVI International Materials Research Congress (Cancun, Mexico. Date: August 20-25, 2017).
- *Member of Organizing Committee*. 3rd Panamerican Materials Congress (San Diego, CA. Date: February 26-March 2, 2017).
- *Co-Chair*. Sintering and Related Powder Processing Science & Technologies, Materials Science & Technology 2016 (Salt Lake City, UT. Date: October 23-27, 2016).
- *Co-Chair*. XXV International Materials Research Congress (Cancún, México. Date: August 14-19, 2016).
- *Member of International Organization Committee*. International Conference on Ceramic Processing Science (Nara, Japan. Date: May 8-11, 2016).
- *Co-Chair*. Advances in Ceramics, Glasses, and Composites by Women, their Mentors and their Mentees, Materials Science & Technology 2015 (Columbus, OH. Date: October 4-8, 2015).
- *Co-Chair*. Sintering and Related Powder Processing Science & Technologies, Materials Science & Technology 2015 (Columbus, OH. Date: October 4-8, 2015).
- *Co-Chair*. Nanostructured Materials and Nanotechnology, XXIV International Materials Research Congress (Cancun, Mexico. Date: August 16-20, 2015).
- *Co-Chair*. Sintering and Related Powder Processing Science & Technologies, Materials Science & Technology 2014 (Pittsburgh, PA. Date: October 12-16, 2014).

- *Member of International Advisory Board*. International Conference on Sintering 2014 (Dresden, Germany. Date: August 24-28, 2014).
- *Co-Chair*. Nanostructured Materials and Nanotechnology Symposium, XXIII International Materials Research Congress (Cancún, México. Date: August 17-21, 2014).
- *Chair*. Processing of Materials Symposium, Pan American Materials Conference 2014 (Sao Paulo, Brazil. Date: July 21-25, 2014).
- *Member of International Advisory Board*. CIMTEC 2014: 13th International Ceramics Congress (Montecatini Terme, Italy. Date: June 8-13, 2014).
- *Advisor*. SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 17-19, 2014).
- *Co-Chair*. 3rd International Symposium on Nanoscience and Nanomaterials (Ensenada, México. Date: March 10-14, 2014).
- *Co-Chair*. Sintering and Related Powder Processing Science & Technologies, Materials Science & Technology 2013 (Montreal, Canada. Date: October 27-31, 2013).
- *Co-Chair*. Nanostructured Materials and Nanotechnology Symposium, XXII International Materials Research Congress (Cancún, México. Date: August 11-16, 2013).
- *Member of International Organizing Committee*. 12th International Conference on Ceramic Processing Science (Portland, OR. Date: August 4-7, 2013).
- *Co-Organizer*. Diversity in MSE Workshop (Arlington, VA. Date: December 9-11, 2012).
- *Co-Chair*. Novel Sintering Processes and News in Conventional Sintering and Grain Growth, Materials Science & Technology 2012 (Pittsburgh, PA. Date: October 7-11, 2012).
- *Co-Chair*. Nanostructured Materials and Nanotechnology Symposium, XXI International Materials Research Congress (Cancún, México. Date: August 13-17, 2012).
- *Co-Chair*. Nanostructured Materials and Nanotechnology Symposium, XX International Materials Research Congress (Cancún, México. Date: August 14-18, 2011).
- *Chair*. ACerS Sosman Award Symposium: Sol-Gel Fundamentals and Applications, Materials Science & Technology 2010 Conference & Exhibition (Houston, TX. Date: October 17-21, 2010).
- *Chair*. Hexaboride Materials Processing, Properties, and Applications, Materials Science & Technology 2010 Conference & Exhibition (Houston, TX. Date: October 17-21, 2010).
- *Co-Chair*. Nanostructured Materials and Nanotechnology Symposium at the XIX International Materials Research Congress (Cancún, México. Date: August 15-19, 2010).
- *Member of Scientific Committee*. IV Workshop on Metastable and Nanostructured Materials (México, D.F., México. Date: August 23-26, 2009).
- *Member of Scientific Committee*. VI Taller Iberoamericano de Educación en Ciencia e Ingeniería de Materiales (Barcelona, Spain. Date: December 1-2, 2008). http://sites.upc.edu/~www-cmem/VITIECIM/
- *Member of Organizing Committee*. XVII International Materials Research Congress (Cancún, México. Date: August 17-21, 2008).
- *Advisor*. SHPE Region 1 Leadership Development Conference (South Lake Tahoe, NV. Date: April 13-14, 2007).
- *Conference Secretariat*. The 3rd International Workshop on Advanced Smart Materials and Smart Structures Technology (South Lake Tahoe, CA. Date: May 29-30, 2006).

- *Conference Secretariat*. The 10th International Conference on Electrorheological Fluids and Magnetorheological Suspensions (South Lake Tahoe, CA. Date: June 18-22, 2006). http://coeweb.engr.unr.edu/ermr2006/
- *Member of International Organizing Committee*. V International Workshop on Materials Education (Córdoba, Argentina. Date: April 13-15, 2006). http://www.uns.edu.ar/Congresos/TIECIMV/
- *Advisor*. SHPE Region 1 Student Leadership Conference (Reno, NV. Date: April 7-8, 2006).
- *Co-Chair*. Symposium on the Synthesis and Processing of Nanostructured Materials at the 30th International Conference and Exposition on Advanced Ceramics and Composites (Cocoa Beach, FL. Date: January 22-27, 2006).
- *Chair*. Nanostructured Materials and Nanotechnology Symposium at the XIV International Materials Research Congress (Cancún, México. Date: August 21-25, 2005).
- *Chair*. Nanostructured Materials and Nanotechnology Symposium at the XIII International Materials Research Congress (Cancún, México. Date: August 22-26, 2004).

**SERVICES TO PROFESSIONAL SOCIETIES**

- *Member*. Materials Research Society Topical Curation Subcommittee (February 2025 – present).
- *Member.* Graduate Excellence in Materials Science Awards 2023 Committee, Basic Science Division of the American Ceramic Society.
- *Member.* Graduate Excellence in Materials Science Awards 2022 Committee, Basic Science Division of the American Ceramic Society.
- *Member.* Graduate Excellence in Materials Science Awards 2021 Committee, Basic Science Division of the American Ceramic Society.
- *Member.* Frontiers of Science and Society Rustum Roy Lecture Award Committee of the American Ceramic Society (October 2020 – September 2025).
- *Member.* Graduate Excellence in Materials Science Awards 2020 Committee, Basic Science Division of the American Ceramic Society.
- *Member.* Graduate Excellence in Materials Science Awards 2019 Committee, Basic Science Division of the American Ceramic Society.
- *Chair*. American Ceramic Society EPDC Awards Committee (June 2018 – May 2019).
- *Member*. American Ceramic Society EPDC Awards Committee (June 2014 – May 2018).
- *Member*. Materials Research Society Program Development Subcommittee (2015-2018).
- *Member.* Graduate Excellence in Materials Science Awards 2018 Committee, Basic Science Division of the American Ceramic Society.
- *Chair*. Society of Hispanic Professional Engineers 2017 Distinguished Lecture Series (Kansas City, MO. Date: November 1-5, 2017).
- *Committee Member*. Arthur Frederick Greaves-Walker Lifetime Service Award, National Institute of Ceramic Engineers of the American Ceramic Society (October 2016 – May 2017).
- *Committee Member*. Karl Schwartzwalder Professional Achievement in Ceramic Engineering (PACE) Award, National Institute of Ceramic Engineers of the American Ceramic Society (October 2016 – May 2017).
- *Member.* Graduate Excellence in Materials Science Awards 2017 Committee, Basic Science Division of the American Ceramic Society.

- *Chair*. Society of Hispanic Professional Engineers 2016 Graduate Programs (Seattle, WA. Date: November 2-6, 2016).
- *Committee Member*. Karl Schwartzwalder Professional Achievement in Ceramic Engineering (PACE) Award, National Institute of Ceramic Engineers of the American Ceramic Society (October 2015 – May 2016).
- *Member*. Graduate Excellence in Materials Science Awards 2016 Committee, Basic Science Division of the American Ceramic Society.
- *Panelist*. SHPE 2015 Panel "Developing the Vision for Your Research Program", (Baltimore, MD. Date: November 12, 2015).
- *Panelist*. SHPE 2015 Panel "Faculty Application Process: Research, Teaching and Service", (Baltimore, MD. Date: November 12, 2015).
- *Panelist*. SHPE 2015 Panel "Call to Action! The Need for Diverse STEM Faculty", (Baltimore, MD. Date: November 12, 2015).
- *Judge*. SHPE 2015 Student Technical Paper Competition, Mechanics of Materials and Fluids Session (Baltimore, MD. Date: November 13, 2015).
- *Co-Chair*. SHPE 2015 Distinguished Lecture Series (November 2015).
- *Member*. Graduate Excellence in Materials Science Awards 2015 Committee, Basic Science Division of the American Ceramic Society.
- *Committee Member*. Karl Schwartzwalder Professional Achievement in Ceramic Engineering (PACE) Award, National Institute of Ceramic Engineers of the American Ceramic Society (October 2014 – May 2015).
- *Committee Member*. SHPE National Institute for Leadership Advancement (March – August 2014).
- *Member*. Graduate Excellence in Materials Science Awards 2014 Committee, Basic Science Division of the American Ceramic Society.
- *Member*. Greaves-Walker Lifetime Achievement Award 2014 Selection Committee, National Institute of Ceramic Engineers of the American Ceramic Society.
- *Chair*. Arthur L. Friedberg Memorial Lecture 2014 Selection Committee, National Institute of Ceramic Engineers of the American Ceramic Society.
- *Chair*. Society of Hispanic Professional Engineers 2013 Graduate Programs (Indianapolis, IN. Date: October 30 – November 2, 2013).
- *Chair*. The American Ceramic Society Bulletin Advisory Board (October 2012 – October 2013).
- *Member*. Arthur L. Friedberg Memorial Lecture 2013 Selection Committee, National Institute of Ceramic Engineers of the American Ceramic Society.
- *President*. National Institute of Ceramic Engineers (October 2012 – October 2013).
- *Member*. Graduate Excellence in Materials Science Awards 2013 Committee, Basic Science Division of the American Ceramic Society.
- *Chair*. Society of Hispanic Professional Engineers 2012 Graduate Programs (Fort Worth, TX. Date: November 14-18, 2012).
- *Co-Chair*. The Robert B. Sosman Award 2012 Selection Committee, Basic Science Division of the American Ceramic Society.

- *Member*. Arthur L. Friedberg Memorial Lecture 2012 Selection Committee, National Institute of Ceramic Engineers of the American Ceramic Society.
- *President Elect*. National Institute of Ceramic Engineers (October 2011 – October 2012).
- *Member*. Graduate Excellence in Materials Science Awards 2012 Committee, Basic Science Division of the American Ceramic Society.
- *Vice President*. National Institute of Ceramic Engineers (October 2010 – October 2011).
- *Member*. The American Ceramic Society Bulletin Advisory Board (October 2009 – October 2012).
- *Member*. Materials Research Society 2011 Nominating Committee.
- *Member of the Board of Directors*. Sociedad Mexicana de Materiales (2005 – 2011).
- *Member*. The Robert B. Sosman Award 2011 Selection Committee, Basic Science Division of the American Ceramic Society.
- *Ad-hoc Reviewer*. L'Oreal For Women in Science Post-doctoral Fellowship Program (January 2006 – present).
- *Chair*. Society of Hispanic Professional Engineers 2011 Graduate Programs (Anaheim, CA. Date: October 26-30, 2011).
- *Co-Chair of Programming 2010*. Basic Science Division of the American Ceramic Society.
- *Chair*. Society of Hispanic Professional Engineers 2010 Graduate Institute (Cincinnati, OH. Date: October 27-31, 2010).
- *Secretary*. National Institute of Ceramic Engineers (October 2009 – September 2010).
- *Member*. Long Range Planning Committee, Basic Science Division of the American Ceramic Society (2007-2009).
- *Member*. Materials Research Society International Relations Committee (June 2003 – November 2009).
- *Chair*. Society of Hispanic Professional Engineers 2009 Annual Conference Student Technical Paper and Poster Competition (Washington, DC. Date: October 28 – November 1, 2009).
- *Member*. National Academy of Sciences Review Panel for the NASA Institute for Advanced Concepts (December 2008 – August 2009).
- *Chair*. V Annual Women in Science Luncheon at the XVIII International Materials Research Congress. The keynote speaker was Dr. Gabriela Alicia Díaz Guerrero, Universidad Nacional Autónoma de México. (Cancún, México. Date: August 19, 2009).
- *Chair*. Society of Hispanic Professional Engineers 2008 Annual Conference Student Technical Paper and Poster Competition (Phoenix, AZ. Date: November 12-15, 2008).
- *Chair*. IV Annual Women in Science Luncheon at the XVII International Materials Research Congress. The keynote speaker was Dr. Katja Lindenberg, University of California, San Diego. (Cancún, México. Date: August 20, 2008).
- *Treasurer*. Northern California Section of the American Ceramic Society (January 2000 – July 2008).
- *Chair*. Society of Hispanic Professional Engineers 2007 Annual Conference Student Technical Paper Competition (Philadelphia, PA. Date: October 31-November 3, 2007).
- *Chair*. Society of Hispanic Professional Engineers 2007 National Technical and Career Conference Student Technical Paper and Poster Competition (Denver, CO. Date: January 10-13, 2007).

- *Chair*. Society of Hispanic Professional Engineers 2006 National Technical and Career Conference Undergraduate and Graduate Technical Paper and Poster Competition (Lake Buena Vista, FL. Date: January 4-8, 2006).
- *Chair*. III Annual Women in Science Luncheon at the XV International Materials Research Congress. The keynote speakers were Dr. Noemi Elisabeth Walsöe de Reca (Centro de Investigación en Sólidos, Argentina) and Dr. Karen Lozano (University of Texas Panamerican). (Cancún, México. Date: August 23, 2006).
- *Chair*. Northern California Section of the American Ceramic Society Annual Dinner Meeting (Davis, CA. Date: May 11, 2005).
- *Chair*. Society of Hispanic Professional Engineers 2005 National Technical and Career Conference Undergraduate and Graduate Technical Paper and Poster Competition (Dallas, TX. Date: January 5-9, 2005).
- *Chair*. II Annual Women in Science Luncheon at the XIV International Materials Research Congress. The keynote speakers were Dr. Lynn Loo (University of Texas at Austin) and Dr. Julia Tagüeña (Universidad Nacional Autónoma de México). (Cancún, México. Date: August 24, 2005).
- *Chair*. Northern California Section of the American Ceramic Society Annual Poster Competition and Dinner Meeting (Davis, CA. Date: May 5, 2004).
- *Chair*. Society of Hispanic Professional Engineers 2004 National Technical and Career Conference Undergraduate Technical Paper Competition (Chicago, Illinois. Date: January 7-10, 2004).
- *Chair*. I Annual Women in Science Luncheon at the XIII International Materials Research Congress. The keynote speakers were Dr. Mildred Dresselhaus (Massachussets Institute of Technology) and Dr. Merrilea Mayo (The National Academies). (Cancún, México. Date: August 24, 2004).
- *Chair*. Northern California Section of the American Ceramic Society Annual Poster Competition and Dinner Meeting (Davis, CA. Date: May 7, 2003).
- *Chair*. Society of Hispanic Professional Engineers 2003 National Technical and Career Conference Undergraduate Technical Paper Competition (New Orleans, LA. Date: January 8-11, 2003).
- *Chair*. Society of Hispanic Professional Engineers 2002 National Technical and Career Conference Undergraduate Technical Paper Competition (Minneapolis, MN. Date: February 6-9, 2002).
- *Banquet Chair*. Society of Hispanic Professional Engineers UC Davis Student Chapter (September 1996 – June 1998).
- *Treasurer*. Society of Hispanic Professional Engineers UC San Diego Student Chapter (September 2003 – June 2004).
- *Secretary*. Society of Hispanic Professional Engineers Southwestern Community College Student Chapter (August 2001 – May 2002).

**SERVICES TO FOUNDATIONS AND BOARDS**

- *Member*. Southwestern College President's Advisory Committee (January 2025 – present).
- *Member*. U.S. National Committee for Theoretical and Applied Mechanics, National Academies (November 2023 – present).
- *Member*. Board of Directors, La Jolla Symphony and Chorus (June 2021 – present).
- *Member*. Consejo Consultivo Internacional, Universidad Autónoma de Baja California (October 2020 – present).
- *Member*. University of Nevada–Reno, College of Engineering Advisory Board (August 2020 – present).

- *Member*. External Review Committee of the Centro de Investigación en Materiales Avanzados, S.C. (December 2017 – present).
- *Member*. Board of Directors, American Ceramic Society (October 2021 – October 2024).
- *Member*. Science Advisory Council, Ocean Discovery Institute (July 2021 – June 2023).
- *Member*. National Academies Condensed Matter and Materials Research Committee (October 2017 – June 2023).
- *Member*. Committee on Advising NSF on its Efforts to Achieve the Nation's Vision for the Materials Genome Initiative (June 2021 – January 2023).
- *Member*. Panel on Assessment of the National Institute of Standards and Technology Center for Neutron Research (NCNR) (July 2021 – November 2021).
- *Member*. Panel on Assessment of the Materials and Manufacturing Sciences at the Army Research Laboratory (May 2020 – August 2021).
- *Member*. Panel on Assessment of the Material Measurement Laboratory of the National Institute of Standards and Technology (MML NIST) (July 2020 – November 2020).
- *Member*. Panel on Review of the In-house Laboratory Independent Research in Materials Sciences at the Army's Research, Development, and Engineering Centers (December 2018 – October 2019).
- *Member*. Panel on Materials Science and Engineering at the Army Research Laboratory (June 2017 – February 2019).
- *Member*. 52 Weeks of Science Committee - Reuben H. Fleet Science Center (January 2017 – April 2018).
- *Committee Member*. Advancing Hispanic Excellence in Technology, Engineering, Mathematics, and Science (AHETEMS) Foundation Scholarship Committee (2009 – 2011).
- *Member of the Board of Directors*. Advancing Hispanic Excellence in Technology, Engineering, Mathematics, and Science (AHETEMS) Foundation (2005).

**SERVICES TO COMMUNITY**

- *Panelist*. Mujeres que Inspiran, Tijuana Innovadora (Tijuana, México. Date: March 19, 2025).
- *Panelist*. "Materials for the Future of Aerospace", Advanced Materials for the Future of the Oklahoma Economy: Challenges and Opportunities, additional panelists: Andrea Hodge, Donald Brenner, Yingtao Liu (Norman, OK. Date: November 15, 2024).
- *Panelist*. "Building an innovative and equitable economy through education, business and government collaboration in the Los Angeles-San Diego-Tijuana region", RE:BORDER Binational Conference 2024, additional panelists: Luis Enrique Palafox, Tatiana Clouthier, and Maritza Diaz (San Diego, CA. Date: October 15, 2024).
- *Welcome Speaker*. UC Centers for Teaching and Learning Annual Meeting (La Jolla, CA. Date: September 4, 2024).
- *Guest Speaker*. 3er. Bootcamp Internacional de Emprendimiento con Ciencia, Universidad Autónoma de Baja California (Tijuana, México. Date: August 22, 2024).
- *Panelist*. Partnerships: Expanding NSF INTERN, Directorate for Engineering (ENG) Advisory Committee Meeting, National Science Foundation (Date: April 4, 2024).
- *Panelist*. Foro Mujer 2024: Mujeres Extraordinarias (Mexicali, México. Date: March 20, 2024).
- *Panelist*. National Discovery Cloud for Climate Workshop (La Jolla, CA. Date: March 7, 2024).

- *Guest Speaker*. Eleanor Roosevelt College Freshman Honors Seminar (La Jolla, CA. Date: February 26, 2024).
- *Guest Speaker*. REV'd Monday—Revelle College (La Jolla, CA. Date: February 26, 2024).
- *Guest Speaker*. adWISE—Advice from Women in Science and Engineering (La Jolla, CA. Date: August 18, 2023).
- *Participant and Author*. Space Materials Workshop, Principal organizers: Timothy Minton (University of Colorado), Vicky Doan-Nguyen Trigg (Aerospace Corporation), Michael P. SanSoucie (NASA Marshall Space Flight Center), Joyce Dever (NASA Glenn Research Center), Ryan Hoffmann (Air Force Research Laboratory), Todd Turner (Air Force Research Laboratory), July 24-28, 2023.
- *Panelist*. "Accessing Graduate Studies in Engineering", UC San Diego Undergraduate Research Hub (La Jolla, CA. Date: July 17, 2023).
- *Keynote Speaker*. Jacobs School of Engineering Corporate Affiliates Program (La Jolla, CA. Date: June 8, 2023).
- *Panel Moderator*. Coloquio: La UNAM en las Fronteras de México (Tijuana, México. Date: May 18, 2023).
- *Keynote Speaker*. Concurso Estatal de Creatividad e Innovación Tecnológica y Hackathon 2023 (Tijuana, México. Date: March 31, 2023).
- *Guest Speaker*. ALRISE Alliance (Date: November 28, 2022).
- *Keynote Speaker*. Like A Girl (Monterrey, México. Date: November 23, 2022).
- *Guest Speaker*. REV 20 (La Jolla, CA. Date: November 15, 2022).
- *Guest Speaker*. Take a Triton to Class Webinar (La Jolla, CA. Date: October 18, 2022).
- *Panelist*. CLS Latino Heritage Month STEM Faculty Plática (La Jolla, CA. Date: October 14, 2022).
- *Keynote Speaker*. LatinX Trailblazers in Engineering (Date: July 26, 2022).
- *Guest Speaker*. UC San Diego Outreach Program for Advancing Learning in STEM (La Jolla, CA. Date: July 20, 2022).
- *Guest Speaker*. HACU's La Academia de Liderazgo (Coronado, CA. Date: June 23, 2022).
- *Keynote Speaker*. Western Alliance to Expand Student Opportunities Sixteenth Annual Student Research Conference (Date: March 26, 2022).
- *Panelist*. Faculty Forum - UC San Diego ACE Internationalization Lab Peer Review Site Visit (Date: November 15, 2021).
- *Panelist*. UC Riverside After Grad: Academic Pathways Week, First-Gen Faculty Keynote Panel (Date: November 1, 2021).
- *Keynote Speaker*. Jornada de Iniciación Científica (Date: October 15, 2021).
- *Outreach Panelist*. MMLD-CEST-2021 (Date: September 28, 2021).
- *Guest Speaker*. Desayuno del Sábado (Date: August 7, 2021).
- *Reviewer*. ColibriMX Scholarship Program, Mexican Consulate in San Diego (August 2021).
- *Guest Speaker*. Girl Up STEAM (Date: July 26, 2021).
- *Guest Speaker*. Jacobs School of Engineering Transfer Prep Closing Event (Date: July 16, 2021).
- *Guest Speaker*. Bee Wise Workshop (Date: July 13, 2021).

- *Guest Speaker*. Meet a Scientist Monthly Speaker Series, Association for Women in Science (AWIS) San Diego (Date: February 10, 2021).
- *Keynote Speaker*. "Broadening Participation in the Materials Science and Engineering Profession", MS&T20 (Date: November 4, 2020). https://www.youtube.com/watch?v=UqaIWgtk7Dw
- *Guest Speaker*. REV 20 (Date: November 3, 2020).
- *Panelist*. "International Recruitment", UC-Mexico Academic Mobility Workshop (October 28-29, 2020).
- *Panelist*. NANO 282 (Date: October 22, 2020).
- *Panelist*. Borderless Business Congress "Advanced Materials for Advanced Manufacturing" (Date: October 13, 2020).
- *Panelist*. Tijuana Innovadora 2020 "Future of Bi-national Education" (Date: October 6, 2020).
- *Reviewer*. ColibriMX Scholarship Program, Mexican Consulate in San Diego (August 2020).
- *Distinguished Speaker*. Naval Research Laboratory HBCU/MI Undergraduate Summer Research Program Seminar Series (Date: August 5, 2020).
- *Guest Speaker*. EducationUSA Webinar: Letters of Recommendation for Graduate Students (Date: August 4, 2020).
- *Keynote Speaker*. UC San Diego TRIO SSSP 27th Annual Awards Ceremony & Grad Celebration (La Jolla, CA. Date: June 7, 2020).
- *Welcome Speaker*. UC San Diego Professional Evening with Industry (La Jolla, CA. Date: October 23, 2019).
- *Keynote Speaker*. MANA de San Diego Scholarship Celebration (El Cajon, CA. Date: July 7, 2019).
- *Invited Speaker*. UC San Diego CSE Department Diversity, Equity, and Inclusion Seminar Series (La Jolla, CA. Date: May 13, 2019).
- *Guest Speaker*. REV 20 (La Jolla, CA. Date: May 7, 2019).
- *Keynote Speaker*. UC San Diego College Signing Day (La Jolla, CA. Date: May 1, 2019).
- *Speaker*. EDI Grant Recipient Luncheon (La Jolla, CA. Date: April 29, 2019).
- *Keynote Speaker*. Women in Materials Science & Engineering Breakfast, Materials Research Society Spring 2019 Meeting (Phoenix, AZ. Date: April 24, 2019).
- *Invited Speaker*. Madrugadores de Tijuana (Tijuana, México. Date: March 28, 2019).
- *Keynote Speaker*. Adelante Mujer Conference (La Jolla, CA. Date: March 16, 2019).
- *Panelist*. Undergraduate Women in Physics Panel (La Jolla, CA. Date: February 8, 2019).
- *Keynote Speaker*. Enspire (La Jolla, CA. Date: January 28, 2019).
- *Keynote Speaker*. STEMMing for Success (La Jolla, CA. Date: December 1, 2018).
- *Guest Speaker*. Red Global San Diego (San Diego, CA. Date: August 9, 2018).
- *Keynote Speaker*. SPIS Welcome Reception (La Jolla, CA. Date: August 5, 2018).
- *Welcome Speaker*. Summer Engineering Institute (La Jolla, CA. Date: August 5, 2018).
- *Distinguished Lecturer*. Osher Lifelong Learning Institute (La Jolla, CA. Date: July 10, 2018).
- *Keynote Speaker*. 2018 AEP Summer Research Program Faculty Breakfast (La Jolla, CA. Date: June 21, 2018).

- *Keynote Speaker*. SHPEtinas Women's Empowerment Conference (Irvine, CA. Date: May 26, 2018).
- *Guest Speaker*. Smart Border Coalition San Diego-Tijuana Stakeholders Working Committee Meeting (San Diego, CA. Date: May 10, 2018).
- *Keynote Speaker*. STEMengineering Day (La Jolla, CA. Date: April 7, 2018).
- *Guest Speaker*. Sharp Minds Lecture Series at the Fleet Science Center (San Diego, CA. Date: April 2, 2018).
- *Keynote Speaker*. Val Verde Unified School District Family Engagement Symposium (Perris, CA. Date: March 23, 2018).
- *Guest Speaker*. Julian Dark Sky Network (Julian, CA. Date: March 10, 2018).
- *Guest Speaker*. REV 20 (La Jolla, CA. Date: February 13, 2018).
- *Welcome Speaker*. Undocu Joy (La Jolla, CA. Date: January 17, 2018).
- *Welcome Speaker*. GEM GRAD Lab (La Jolla, CA. Date: October 27, 2017).
- *Guest Speaker*. Instituto México de Baja California High School Career Week (Tijuana, México. Date: October 27, 2017).
- *Plenary Speaker*. CREDITS: Strengthening Team Science in California (Lake Arrowhead, CA. Date: October 14, 2017).
- *Co-chair*. Cross-border Innovation Gala (La Jolla, CA. Date: September 9, 2017).
- *Guest Speaker*. STARS Science Lecture (La Jolla, CA. Date: July 21, 2017).
- *Guest Speaker*. "Colonizing Mars - Dream or Future?", Suds & Science Program, Ruben H. Fleet Science Center (Vista, CA. Date: June 5, 2017).
- *Panelist*. Cross-border Business Forum - San Diego Regional Chamber of Commerce (Tijuana, México. Date: May 23, 2017).
- *Guest Speaker*. Vi Technology Group (La Jolla, CA. Date: May 18, 2017).
- *Keynote Speaker*. ChicasSTEM Program of US Consulate (Ciudad Juárez, México. Date: May 13, 2017).
- *Guest Speaker*. Federal Women's Program at US Consulate (Ciudad Juárez, México. Date: May 12, 2017).
- *Guest Speaker*. Education USA Advising Center (Ciudad Juárez, México. Date: May 12, 2017).
- *Guest Speaker*. La Rodadora Children's Museum (Ciudad Juárez, México. Date: May 11, 2017).
- *Guest Speaker*. Webinar, US Consulate Ciudad Juárez (Date: May 3, 2017).
- *Guest Speaker*. Webinar, Red de Talentos Dallas (Date: April 27, 2017).
- *Closing Speaker*. UC San Diego 30th Annual Undergraduate Research Conference (La Jolla, CA. Date: April 22, 2017).
- *Welcome Speaker*. SHPE Region 2 Leadership Development Conference (La Jolla, CA. Date: April 20, 2017).
- *Keynote Speaker*. Enspire 2017 (La Jolla, CA. Date: March 2, 2017).
- *Panelist*. SWE Envision 2017 (La Jolla, CA. Date: February 25, 2017).
- *Plenary Speaker*. NSF INCLUDES Conference: Collective Impact as a Pathway to Reinvigorate Broadening Participation in STEM (La Jolla, CA. Date: January 21, 2017).

- *Panelist*. "Mentoring Historically Underrepresented Minority Faculty", Uncovering the Institutional Impact of Scholars from Historically Underrepresented Backgrounds: A meeting sponsored by RWJF Connections and the University of Southern California (Los Angeles, CA. Date: December 1, 2016).
- *Chair*. Art Sale Scholarship Fundraiser (La Jolla, CA. Date: November 19-20, 2016).
- *Honorary Lecturer*. SHPE 2016 (Seattle, WA. Date: November 3, 2016).
- *Moderator*. Panel on the Mexican Diaspora, Red Global MX 2016 (México City, México. Date: September 28 - October 1, 2016).
- *Guest Speaker*. CANIETI Breakfast (Tijuana, Mexico. Date: September 22, 2016).
- *Guest Speaker*. San Diego Chamber of Commerce Education & Workforce Development Committee Meeting (San Diego, CA. Date: September 21, 2016).
- *Faculty Panelist*. TRIO Program New Student Orientation (La Jolla, CA. Date: August 12, 2016).
- *Keynote Speaker*. Semana de Ciencias (Ensenada, México. Date: July 30, 2016).
- *Guest Speaker*. Programa de Género Altazor (Tijuana, México. Date: June 13, 2016).
- *Keynote Speaker.* Loma Verde Elementary School Graduation / Promotion (Chula Vista, CA. Date: June 3, 2016).
- *Keynote Speaker*. 2016 ESL Certificate Ceremony, Southwestern Community College (Chula Vista, CA. Date: May 13, 2016).
- *Keynote Speaker*. 16th annual MSE Scholarship Awards Banquet, Southwestern Community College (Chula Vista, CA. Date: May 6, 2016).
- *Guest Speaker*. Engineering Class at Our Lady of Peace Academy (San Diego, CA. Date: April 27, 2016).
- *Judge*. Expo Proyectos Interdisciplinarios, Bachillerato La Paz (Tijuana, Mexico. Date: April 19, 2016).
- *Panelist*. Panel on Academic Careers organized by the Women in Bioengineering Graduate Student Group (La Jolla, CA. Date: March 30, 2016).
- *Panelist*. EXPOTECH 2016 (Tijuana, Mexico. Date: March 3, 2016).
- *Guest Speaker*. CANIETI Breakfast (Tijuana, Mexico. Date: September 30, 2015).
- *Guest Speaker*. UC San Diego Creating Scientists Undergraduate Research Program (La Jolla, CA. Date: July 7, 2015).
- *Judge*. Expo Proyectos Interdisciplinarios, Bachillerato La Paz (Tijuana, Mexico. Date: May 12, 2015).
- *Keynote Speaker*. Madrugadores de Tijuana (Tijuana, Mexico. Date: May 7, 2015).
- *Panelist*. Women Faculty Mixer and Roundtable “Are you Bossy or Brilliant?” (La Jolla, CA. Date: April 22, 2015).
- *Keynote Speaker.* Annual S.M.A.R.T. Conference (Science, Mathematics, Articulation, Resource, Technology) (Chula Vista, CA. Date: April 18, 2015).
- *Guest Speaker*. SHPE UNR Student Chapter Meeting (Reno, NV. Date: April 13, 2015).
- *Keynote Speaker*. Cesar E. Chavez 11th Annual Scholarship Breakfast, Southwestern College Chicano Latino Coalition (Chula Vista, CA. Date: March 27, 2015).
- *Keynote Speaker*. CAMP 2015 Symposium Awards Dinner (Irvine, CA. Date: February 7, 2015).

- *Guest Speaker*. UCSD IDEA Center Grad Talk: How to Choose and Advisor (La Jolla, CA. Date: October 10, 2014).
- *Keynote Speaker*. Chancellor's Scholars Opening Reception (La Jolla, CA. Date: October 10, 2014).
- *Plenary Speaker*. 1er Foro Mujeres en la Ciencia at Universidad Autónoma de Baja California (Tijuana, México. Date: October 6, 2014).
- *Speaker*. COSMOS Discovery Lecture (La Jolla, CA. Date: July 29, 2014).
- *Guest Speaker*. Eco-Engineering Academy at Southwest High School (Chula Vista, CA. Date: May 29, 2014).
- *Keynote Speaker*. The SHPE 8th Annual High School Conference EmPower 2014 (La Jolla, CA. Date: May 3, 2014).
- *Speaker*. UC San Diego JSOE CAREER Award Preparation Workshop (La Jolla, CA. Date: April 30, 2014).
- *Keynote Speaker*. MANA de San Diego meeting at UC San Diego (La Jolla, CA. Date: March 22, 2014).
- *Guest Speaker*. UC San Diego IDEA Center Grad Talk: How to Choose an Impactful Research Question/Topic (La Jolla, CA. Date: February 28, 2014).
- *Guest Speaker*. UC San Diego Initiative for Maximizing Student Development Seminar Series (La Jolla, CA. Date: February 11, 2014).
- *Surprise Reader*. Pre-K Class at San Carlos United Methodist Pre-school (San Diego, CA. Date: November 22, 2013).
- *Keynote Speaker*. Castle Park Middle School Graduation / Promotion (Chula Vista, CA. Date: June 7, 2013).
- *Judge*. 4th Expo of Interdisciplinary Projects of "La Paz" High School (Tijuana, Mexico. Date: April 30, 2013).
- *Keynote Speaker*. VISTAS Dinner (Alfred, NY. Date: April 12, 2012).
- *Surprise Reader*. Pre-K Class at San Carlos United Methodist Pre-school (San Diego, CA. Date: March 2, 2012).
- *Keynote Speaker*. VISTAS Dinner (Alfred, NY. Date: April 7, 2011).
- *Keynote Speaker*. Alfred University Board of Trustees Dinner (Alfred, NY. Date: October 14, 2010).
- *Keynote Speaker*. VISTAS Dinner (Alfred, NY. Date: April 29, 2010).
- *Keynote Speaker*. Bergren Forum (Alfred, NY. Date: April 15, 2010).
- *Invited Speaker*. VISTAS Dinner (Alfred, NY. Date: April 16, 2009).
- *Host*. "Man in Space – How Far" Table, Food for Thought 2008 Banquet (Reno, NV. Date: April 28, 2008).
- *Keynote Speaker*. Nevada MESA Program Fall Banquet (Sparks High School, Reno, NV. Date: November 18, 2004).
- *Guest Speaker*. Nevada MESA Summer PASS Program (University of Nevada–Reno, Reno, NV. Date: August 3, 2004).
- *Judge*. Roy Gomm Elementary School Inventor's Convention (Reno, NV. Date: March 2, 2004).

- *Keynote Speaker*. University of California–Davis Minority Engineering Program Annual Banquet (Davis, CA. Date: May 16, 2003).
- *Judge*. Lemelson Science Fair (Reno, NV. Date: March 13, 2003).
- *Keynote Speaker*. Nevada MESA Program Fall Banquet (Traner Middle School, Reno, NV. Date: December 5, 2002).
- *Exhibits Committee Member*. The Tech Museum of Innovation (San Jose, CA. Date: September 2000 – December 2003).
- *Reviewer*.

  **Agencies**
  National Science Foundation (NSF)
  National Aeronautics and Space Administration (NASA)
  Department of Homeland Security (DHS)
  Department of Energy
  Air Force Office of Scientific Research (AFOSR)
  U.S. Civilian Research and Development Foundation (CRDF)
  American Chemical Society Petroleum Research Fund (PRF)
  Consejo Nacional de Ciencia y Tecnologia (CONACyT)
  Army Research Office (ARO)
  European Research Council
  Defense Systems Information Analysis Center
  National Academies of Sciences, Engineering, and Medicine

  **Journals**
  ACS Applied Materials & Interfaces
  ACS Applied Nanomaterials
  ACS Nano
  Acta Materialia
  Advanced Engineering Materials
  Advanced Materials
  Advances in Applied Ceramics
  AIP Advances
  Applied Surface Science
  Beilstein Journal of Nanotechnology
  Biomaterials Advances
  Biomedical Materials
  Carbon
  Catalysts
  Ceramics International
  Ceramic Transactions
  ChemComm
  Chemical Engineering Journal
  Chemistry of Materials
  Chemistry Select
  Chemical Physics Letters
  Colloids and Surfaces A
  CrystEngComm
  ECS Journal of Solid State Science and Technology
  ECS Solid State Letters
  Electrochemical and Solid-State Letters
  Energy & Fuels
  Experimental Thermal and Fluid Science

European Physical Journal D
Extreme Mechanics Letters
Heat Transfer Engineering
IEEE Transactions on Nuclear Science
Industrial & Engineering Chemistry Research
Instrumentation Science & Technology
International Journal of Applied Ceramic Technology
International Journal of Applied Glass Science
International Journal of Refractory Metals and Hard Materials
International Journal of Thermal Sciences
International Journal of Electrochemistry
International Journal of Nanomedicine
International Journal of Nanoparticles
Inorganic Chemistry
Journal of Advanced Materials
Journal of Alloys and Compounds
Journal of Applied Physics
Journal of Applied Research and Technology
Journal of ASTM International
Journal of Biomedical Materials Research Part B: Applied Biomaterials
Journal of Biomedical Nanotechnology
Journal of Cleaner Production
Journal of Colloid and Interface Science
Journal of Crystal Growth
Journal of Inorganic Materials
Journal of Luminescence
Journal of Materials Chemistry
Journal of Materials Engineering and Performance
Journal of Materials Research
Journal of Materials Research and Technology
Journal of Materials Science
Journal of Materials Science and Technology
Journal of Materials Science: Materials in Medicine
Journal of Molecular Liquids
Journal of Nanoparticle Research
Journal of Nano Research
Journal of Nanoscience and Nanotechnology
Journal of Physical Chemistry
Journal of Physical Chemistry Letters
Journal of Physics – Condensed Matter
Journal of Physics D
Journal of Professional Issues in Engineering Education and Practice
Journal of Rare Earths
Journal of Solid State Chemistry
Journal of the American Ceramic Society
Journal of the American Chemical Society
Journal of Women and Minorities in Science and Engineering
Langmuir
Materials
Materials Characterization
Materials Chemistry and Physics
Materials Letters
Materials Research Bulletin

Materials Research Express
Materials Research Letters
Materials Science and Engineering A
Materials Science and Engineering B
Materials Science Forum
Metallurgical and Materials Transactions A
Metallurgical and Materials Transactions B
Metals
MRS Communications
Nano Letters
Nanomaterials and Nanotechnology
Nanoscale
Nanoscale Advances
Nanoscale Research Letters
Nanotechnology
Nature
New Journal of Chemistry
Optical and Quantum Electronics
Optical Materials
Optical Materials Express
Particle & Particle Systems Characterization
Philosophical Magazine
Physical Chemistry Chemical Physics
Powder Technology
Revista Ingeniería é Investigación
Science of Advanced Materials
Scientific Reports
Scripta Materialia
Solid State Ionics
Solid State Sciences
SpringerPlus
RSC Advances
Surface and Coatings Technology
Revista Latinoamericana de Metalurgia y Materiales
Thermal Science
Transactions on Nuclear Science

## ACTIVITIES CONNECTED TO THE UNIVERSITY OF CALIFORNIA, SAN DIEGO

### SERVICES TO THE UNIVERSITY OF CALIFORNIA SYSTEM

- *Member*. Joint Senate-Administration Workgroup to Review Academic Personnel Manual Policy Language (APM - 015 & APM - 016) (September 2024 – present).
- *Member*. UCLA Materials Science and Engineering External Advisory Board (September 2024 – August 2025).
- *Vice-Chair*. UC-Mexico Initiative's Taskforce on Student Mobility (January 2015 – February 2017).
- *Member*. UC-Mexico Initiative's Energy Working Group (October 2014 – February 2017).
- *Member*. External Advisory Board for the UC Davis ADVANCE Program (November 2012 – December 2017).
- *Member*. Executive Steering Committee for the UC LEADS Program (November 2012 – June 2015).

**SERVICES TO UNIVERSITY OF CALIFORNIA, SAN DIEGO**

- *Chair*. UC San Diego Academic Senate (September 2024 – August 2025).
- *Vice-Chair*. UC San Diego Academic Senate (September 2023 – August 2024).
- *Member*. EVC 5-Year Review Committee (January 2023 – August 2023).
- *Member*. Education Advisory Committee of the UC San Diego MRSEC (July 2022 – present).
- *Alternate Delegate*. Representative Assembly, Revelle College (July 2022 – June 2023).
- *Member*. WIFIRE Advisory Board (October 2021 – present); https://wifire.ucsd.edu/
- *Member*. TILOS Internal Advisory Board (July 2021 – June 2022)
- *Member*. Center for Comparative Immigration Studies Board (September 2018 – present); https://ccis.ucsd.edu/
- *Member*. Task Force on Holistic Graduate Funding (July 2021 – June 2022).
- *Member*. UC San Diego Basement Faculty Advisory Committee (September 2018 – June 2022).
- *Member*. ACE Internationalization Lab Steering Committee (October 2019 – December 2021).
- *Member*. $OAR^2$ Advisory Board (January – August 2021).
- *Member*. HDH Social Impact & Innovation Committee (September 2018 – June 2021).
- *Member*. School of Engineering Time-to-Degree Task Force (April 2019 – June 2021).
- *Member*. Summer General Campus Task Force on Budget Planning Guidance (June 2020 – August 2020).
- *Member*. VC-EDI 5-Year Review Committee (January 2020 – August 2020).
- *Member*. La Jolla Symphony & Chorus Advisory Committee (March 2019 – June 2020).
- *Member*. UC San Diego Chemical Safety and Surveillance Committee (February 2019 – June 2020).
- *Member*. HSI Workgroup (September 2017 – June 2020).
- *Member*. Conflict of Interest Independent Review Committee (September 2015 – June 2020).
- *Member*. CLAH Steering Committee (September 2017 – July 2019).
- *Member*. VCSA Search Committee (January – September 2018).
- *Advisor*. Society of Hispanic Professional Engineers UC San Diego student chapter (January 2013 – June 2018).
- *Chair*. Diversity & Equity Committee of the Faculty Senate (September 2016 – August 2017).
- *Member*. JSOE Excellence Diversity Hire Search Committee (September 2016 – June 2017).
- *Member*. UC San Diego Interdisciplinary Initiative: Exploring the Basis of Human Knowledge, Learning and Creativity Faculty Search Committee (September 2016 – June 2017).
- *Member.* Joint Administrative-Senate Task Force on Exploring Hispanic Serving Institution Designation for UC San Diego (October 2016 – May 2017).
- *Revelle's Alternate Delegate*. Academic Senate Representative Assembly (July 2015 – June 2016).
- *Member*. JSOE Excellence Diversity Hire Search Committee (September 2015 – June 2016).
- *Member*. Revelle College 50th Anniversary Faculty and Emeriti Engagement Committee (October 2014 – June 2015).

- *Member*. JSOE Excellence Diversity Hire Faculty Search Committee (September 2014 – June 2015).
- *Member*. Assistant Vice Chancellor for Student Retention and Success Search Committee (February – June, 2015).
- *Member*. JSOE Excellence Diversity Hire Search Committee (September 2013 – June 2014).
- *Member*. Chemical Safety and Surveillance Committee of the Faculty Senate (October 2013 – October 2016).
- *Member*. Diversity & Equity Committee of the Faculty Senate (September 2014 – August 2016).
- *Member*. Director of the Center for Engaged Teaching Search Committee (July-August 2015).
- *Member*. Revelle College Natural Sciences Requirement Committee (May 2014 – August 2015).
- *Member*. Vice Chancellor and Chief Financial Officer Search Committee (April – August 2014).
- *Member*. Undergraduate Scholarships and Honors Committee of the Faculty Senate (September 2013 – August 2014).
- *Member*. IDEA Scholars 2014 Selection Committee (June 2014).
- *Member*. IDEA Student Center's Faculty/Executive Diversity Advisory Board (April 2013 – May 2014).
- *Member*. IDEA Scholars 2013 Selection Committee (June 2013).
- *Member*. Revelle College Provost Search Committee (September – December 2013).
- *Member*. Raza Resource Centro Director Search Committee (September – December 2013).

**SERVICES TO THE DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING**

- *Member*. MAE Council (September 2022 – present).
- *Member*. Mechanics & Materials Faculty Search Committee (September 2022 – June 2023).
- *Chair*. Committee for Equity, Diversity & Inclusion (July 2020 – June 2022).
- *Member*. MAE Council (July 2017 – July 2021).
- *Chair*. Excellence Faculty Search Committee (September 2019 – April 2020).
- *Member.* MAE Undergraduate Affairs Committee (July 2019 – June 2020).
- *Advisor*. Rocket Propulsion Laboratory (November 2017 – June 2019).
- *Advisor*. Students for the Development of Space (November 2017 – June 2019).
- *Member*. Building Renovation Committee (July 2017 – June 2018).
- *Member*. MAE Space Committee (January 2015 – June 2017).
- *Diversity Officer*. MAE Department (September 2014 – August 2016).
- *Member*. ABET Committee (November 2012 – August 2016).
- *Director*. MAE Characterization Core Facility (November 2023 – June 2016).
- *Member*. Materials in Extreme Environments Search Committee (September 2014 – June 2015).

## ACTIVITIES CONNECTED TO ALFRED UNIVERSITY

### SERVICES TO UNIVERSITY

- *Chair*. New York State College of Ceramics Faculty Council (August 2012 – March 2013).
- *Member*. New York State College of Ceramics Faculty Council (August 2010 – July 2012).
- *Member*. Vice-President for Statutory Affairs Search Committee (May 2009 – April 2010).

### SERVICES TO THE SCHOOL OF ENGINEERING

- *Member*. Kazuo Inamori School of Engineering Graduate Admissions Committee (October 2008 – October 2012).
- *Member*. Kazuo Inamori School of Engineering Research Strategic Planning Committee (August 2008 – October 2012).
- *Member*. Scholes Library Committee (August 2011 – May 2012).
- *Member*. Fall 2011 Faculty Search Committee (September 2011 – May 2012).
- *Chair*. Fall 2010 Faculty Search Committee (September 2010 – May 2011).
- *Advisor*. Keramos Student Chapter (August 2010 – October 2012).

## ACTIVITIES CONNECTED TO THE UNIVERSITY OF NEVADA, RENO

### SERVICES TO UNIVERSITY

- *Member*. Curriculum Committee, College of Engineering (January 2005 – May 2008).
- *Founding Faculty Advisor*. Society of Hispanic Professional Engineers UNR Student Chapter (March 2004 – May 2008).
- *Member*. Faculty Search Committee, Department of Chemistry, College of Science (Fall 2003).
- *Member*. Faculty Search Committee, Department of Mechanical Engineering, College of Engineering (Spring 2006).
- *Member*. Chair Search Committee, Department of Chemical and Metallurgical Engineering, College of Engineering (Spring 2007).
- *Member*. Dean Search Committee, College of Engineering (September 2007 – May 2008).

### SERVICES TO DEPARTMENT OF CHEMICAL AND METALLURGICAL ENGINEERING

- *Member*. Department Student Recruitment Committee (July 2002 – May 2008).
- *Chair*. Metallurgical and Materials Engineering Division Bi-Monthly Seminars (July 2002 – May 2005).
- *Webmaster*. Department of Chemical and Materials Engineering Web Page (July 2002 – June 2009).
- *Faculty Advisor*. Materials Advantage and Research Society (July 2002 – May 2008).
- *Chair*. Faculty Search Committee (September 2005 – June 2006).
- *Member*. Department Chair Search Committee (September 2006 – June 2007).