The 28th Rare Earth Research Conference appreciates the support of all its sponsors.

Lutetium (more than $5,000)

Iowa State University
College of Engineering

Europium ($3,000 or less)

Iowa State University
Department of Chemistry

Iowa State University
Department of Materials Science and Engineering
Welcome to the 28th Rare Earth Research Conference

Welcome Rare Earthers!

As the local chairs of the 28th Rare Earth Research Conference, it is our pleasure and privilege to welcome you to Ames, Iowa.

The City of Ames was founded in 1864 as a station stop on the Cedar Rapids and Missouri Railroad and was named after 19th century U.S. Congressman Oakes Ames of Massachusetts, who was influential in the building of the transcontinental railroad. Ames was founded by local resident Cynthia Olive Duff and railroad magnate John Insley Blair, near a location that was deemed favorable for a railroad crossing of the Skunk River.

Today the small town of Ames, Iowa is the ninth “Best Place to Live in the United States”, has a population of over 65,000, and offers cultural, recreational, educational, business and entertainment amenities more common in larger metros.

In 1856, the Iowa General Assembly enacted legislation to establish the State Agricultural College and Model Farm. Story County was chosen as the location on June 21, 1859. When Iowa accepted the provisions of the Morrill Act of 1862, Iowa State became the first institution in nation designated as a land-grant college. The institution was coeducational from the first preparatory class admitted in 1868. The formal admission of students began the following year, and the first graduating class of 1872 consisted of 24 men and 2 women. Today, Iowa State University of Science and Technology (ISU) hosts more than 36,000 students.

ISU also operates the Ames Laboratory (432 employees), a U.S. Department of Energy Laboratory founded 70 years ago by its first director, Frank H. Spedding, following his participation in the Manhattan Project. Since then, the Ames Laboratory has been dedicated, although not exclusively, to the chemistry and physics of the “Fraternal Fifteen” so named by the late Karl A. Gschneidner in 1966, the “Rare Earths”

The first Rare Earth Research Conference (RERC) was organized by Eugene V. Kleber at Lake Arrowhead, California in 1960. Ames hosted the 5th RERC in 1965. After 52 years, another conference was overdue, so now alternates on a three-year cycle with the International Conference on f-Elements (Europe) and the International Conference on Rare Earths. The 28th Rare Earth Research Conference in Ames follows the successful 26th RERC in Santa Fe, New Mexico (2011), and the 27th RERC in Squaw Valley, Nevada (2014).

We are grateful to the Program Committee, headed by Eric Schelter, the Spedding Award Committee, headed by Ana de Bettencourt-Dias and to Aubrey Robertson and Jennifer Vit (ISU Conference Planning and Management). We would also like to extend sincere thanks and appreciation to our sponsors.

Thank you all for coming and participating actively in the 28th RERC in Ames, Iowa.

Vitalij Pecharsky, Anja-Verena Mudring, and Gerd Meyer
Dr. Paul Canfield, The Ames Laboratory and Iowa State Univ., USA  
Magnetic Properties of the SmNi$_2$Fe$_x$B Solid Solution  

Paul C. Canfield, Ph.D., graduated summa cum laude from the University of Virginia (Charlottesville) with a BS in Physics in 1983. He received his MS from the University of California, Los Angeles, where he received his Ph.D. in 1990, having researched experimental condensed matter physics. From 1990 to 1993, Dr. Canfield was a postdoctoral researcher at the Los Alamos National Laboratory in New Mexico. In 1993, Dr. Canfield joined the Ames Laboratory at Iowa State University. Dr. Canfield’s research is centered on the design, discovery, growth and characterization of novel electronic and magnetic materials. He has made key contributions to the fields of superconductivity, heavy fermions, quantum criticality, quasicrystals, spin glasses, local-moment metamagnetism, and metal-to-insulator transitions. He was awarded the 2011 Department of Energy Lawrence Award for Condensed Matter Physics. In 2014, Dr. Canfield was awarded the APS David Adler Lectureship Award in the Field of Materials Physics, and was named a Gordon and Betty Moore Materials Synthesis Investigator. In 2015, he received the Humboldt Research Award.

Prof. Mark Jensen, Colorado School of Mines, USA  
Trending Now Rare Earth Separations  

Mark Jensen is a Professor of Chemistry and the Jerry and Tina Grandey University Chair in Nuclear Science and Engineering at the Colorado School of Mines, where he directs the Nuclear Science and Engineering Program. He earned his PhD in Inorganic and Nuclear Chemistry from Florida State University in 1994 for work that included rare earth separations and then spent 20 years as a scientist in the Heavy Element Chemistry and Separation Science group at Argonne National Lab. His research examines the separations, environmental, and biological chemistry of the f-elements. He is an associate editor of the separations journal Solvent Extraction and Ion Exchange.
Kenneth N. Raymond obtained a B.A. in Chemistry from Reed College in 1964 and Ph.D. in Inorganic Chemistry from Northwestern University in 1968. He began his faculty appointment at the University of California at Berkeley on July 1, 1967. There he remained, appointed Chancellor’s Professor in 2006. He served as Vice Chair of the Berkeley Chemistry Department (1982-1984 and 1999-2000) and Chair (1993-1996).

Dr. Raymond did early work on siderophores, low molecular weight complexing agents used by bacteria to obtain the iron they need to grow. This led to a general interest in metal ion selective chelating agents for a range of applications. These include lanthanide complexes for use in imaging and assay applications, and radioisotope complexing agents for biomedical use. More recently he collaborated with Berkeley colleagues to use metal-ligand supramolecular clusters from his laboratory as host molecules and enzyme mimics in catalysis.

Dr. Raymond has received many awards and honors, including election to the National Academy of Sciences and the American Academy of Arts and Sciences. In addition to his academic appointment on the Berkeley campus, in 2001 he co-founded Lumiphore, Inc. He is the author of 24 US Patents, 11 International Patents and 569 research publications. In March 2017, he received a Department of Energy grant to continue his research on energy transfer in lanthanide luminescent complexes.
## Monday, June 19, 2017

### Conference Agenda Day 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30-8:15</td>
<td>Registration and Refreshments</td>
<td>First Floor Lobby</td>
</tr>
<tr>
<td>8:15-8:45</td>
<td>Welcome Remarks</td>
<td>Benton Auditorium</td>
</tr>
<tr>
<td>8:45-9:45</td>
<td>Ce(^{3+}), Th(^{4+}), and Pu(^{4+}): Comparative Tetravalent f-Ion Chemistry, Lynda Soderholm</td>
<td>Benton Auditorium</td>
</tr>
<tr>
<td>9:45-10:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Magnetic Properties of the SmNi(<em>{1-x})Fe(</em>{x}) Solid Solution, Paul Canfield</td>
<td>Benton Auditorium</td>
</tr>
<tr>
<td>10:30-10:50</td>
<td>Soft X-ray Spectroscopy Studies of f-electron Materials, David Shuh</td>
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</tr>
<tr>
<td>10:50-11:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:00-11:20</td>
<td>Theoretical Studies of Actinide-Ligand Bonding Interactions, Enrique Botista</td>
<td></td>
</tr>
<tr>
<td>11:20-11:40</td>
<td>Competitive Solvation Effects Within Multicomponent Solutions of Tridental Ions, Aurora Clark</td>
<td>Room 167-179</td>
</tr>
<tr>
<td>11:40-12:00</td>
<td>LUNCH*</td>
<td>Room 167-179</td>
</tr>
<tr>
<td>12:00-1:30</td>
<td>Light refreshments will be served. Refer to page 19 for poster presentation details</td>
<td></td>
</tr>
<tr>
<td>1:30-2:30</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>2:30-3:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:00-3:30</td>
<td>Recent Advances in the +2 Oxidation State Chemistry of the Rare Earth Metals, William Evans</td>
<td>Room 004-Ground</td>
</tr>
<tr>
<td>3:30-3:50</td>
<td>Synthesis of U(VI)bis(mido) Complexes from UC(_4): Investigations of Oxidation Processes in Uranium Chemistry, Jim Boncella</td>
<td>Room 004-Ground</td>
</tr>
<tr>
<td>3:50-4:10</td>
<td>Non-pincer-type Mononuclear Rare-earth Metal Alkylidene Complexes: Synthesis, Structure and Reactivity, Yaoqiang Chen</td>
<td>Room 004-Ground</td>
</tr>
<tr>
<td>4:10-4:20</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>4:20-4:40</td>
<td>Rare Mixed-valent Rare Earth Metal Complexes, Peter Junk</td>
<td>Benton Auditorium</td>
</tr>
<tr>
<td>4:40-5:00</td>
<td>Small Molecule Activation Induced by Lanthanides, Peter Roesky</td>
<td></td>
</tr>
<tr>
<td>5:00-5:30</td>
<td>Recent Advances in Triamido-Supported Actinide-Ligand Multiple Bonding, Steven Liddle</td>
<td>Benton Auditorium</td>
</tr>
<tr>
<td>5:30-7:30</td>
<td>DINNER ON YOUR OWN Refer to page 21 for recommended dining options. Refer to page 22-24 for shuttles</td>
<td></td>
</tr>
<tr>
<td>7:00-9:00</td>
<td>POSTER SESSION I, Co-Chairs: Anja Mudring and Eric Schelter</td>
<td></td>
</tr>
</tbody>
</table>
**Tuesday, June 20, 2017**

**CONFEREE AGENDA DAY 3**

**7:30 - 8:30 am**  Morning Refreshments

**8:30 - 9:30 am**  Trending Now – Rare Earth Separations, Mark Jensen

**9:45 - 10:00 am**  Break

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**Concurrent Sessions: 10:00 am - 12:00 pm**

**Organometallics and Coordination Chemistry 2, Yiqiong Chen**  Benton Auditorium

<table>
<thead>
<tr>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>10:10-11.00</td>
<td>Homoleptic Organolanthanide Compounds Supported by SiH-containing Ligands, Aaron Sadow</td>
</tr>
<tr>
<td>11:00-12.00</td>
<td>Organothorium Peptoidogen Chemistry, Justin Wolensky</td>
</tr>
<tr>
<td>11:40-12.00</td>
<td>The Influence of Multi-Configurational Electronic States on the Properties and Reactivity of Organolanthanides, Greg Nocton</td>
</tr>
<tr>
<td>12:00-1:30</td>
<td>LUNCH</td>
</tr>
</tbody>
</table>

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**Biological & Medicinal Applications 1, Matthew Allen**  Room 004-Ground

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:00-4:20</td>
<td>Periodicity and the Chemistry of Protactinium, Richard Wilson</td>
</tr>
<tr>
<td>4:20-5:00</td>
<td>The Roles of 4f and 5f Orbitals in Bonding: a Magnetochemical, Crystal Field, Density Functional Theory, and Multireference Wavefunction Study, Wayne Lukens</td>
</tr>
<tr>
<td>5:00-5:30</td>
<td>New Reactivity in Actinide Chemistry Facilitated by Supporting Ligand Design, John Arnold</td>
</tr>
</tbody>
</table>

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**Biological & Medicinal Applications 2, Matthew Allen**  Room 004-Ground

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:00-3:30</td>
<td>Small Molecule Activation by Multimetallic Uranium Nitrides, Marinello Mazzanti</td>
</tr>
<tr>
<td>3:30-4:00</td>
<td>Fluorescence Spectroscopy and Microscopy as Tools for Monitoring the Redox Chemistry of Uranium, Louise Notrojan</td>
</tr>
<tr>
<td>4:10-4:20</td>
<td>f-Element Silylamide Complexes with Remarkable Bonding Motifs, David Mills</td>
</tr>
</tbody>
</table>

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**Biological & Medicinal Applications 3, Matthew Allen**  Room 004-Ground

<table>
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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>3:30-3:50</td>
<td>Photophysical Characterization of a Library of Luminescent Lanthanide Complexes, Eszter Borbas</td>
</tr>
<tr>
<td>4:00-5:00</td>
<td>Lanthanide-based Nanoparticles: a versatile platform for optical probes, Fernando Sigoli</td>
</tr>
<tr>
<td>5:00-5:30</td>
<td>PARASHIFT probes: the importance of coordination environment on the NMR shifts of lanthanide complexes, Kevin Mason</td>
</tr>
</tbody>
</table>

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**Biological & Medicinal Applications 4, Matthew Allen**  Room 004-Ground

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30-3:50</td>
<td>The Legacy of Karl Gschneidner in Rare Earths and Critical Materials, Alex King</td>
</tr>
<tr>
<td>4:00-5:00</td>
<td>Lanthanide-based Nanoparticles: a versatile platform for optical probes, Fernando Sigoli</td>
</tr>
<tr>
<td>5:00-5:30</td>
<td>Inspiration from Karl A. Gschneidner, Jr.: Rare Earth containing Zintl Phases and their Thermoelectric and Magnetic Properties, Susan Kauzlarich</td>
</tr>
</tbody>
</table>

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**Light refreshments will be served. Refer to page 19 for poster presentation details.**
**Conference Agenda Day 4**  
**Wednesday, June 21, 2017**

- **7:30 - 8:30 am**  
  **Morning Refreshments**  
  First Floor Lobby

- **8:30 - 9:30 am**  
  **Manipulation of Redox Properties of F-Block Elements Using Redox-Active Ligands**  
  Suzanne Bart  
  Marinella Mazzanti, Chair  
  Benton Auditorium

- **9:30 - 10:00 am**  
  **Break**

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**Concurrent Sessions: 10:00 am - 12:00 pm**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>10:00 am</td>
<td>Taking Advantage of the Chemistry of Heterocycles in Actinide Selective Coordination of U(VI) (UO2²⁺) and Th(VI): Crystal packing, Reactivity, and IT-IT Interactions, Anne Garden</td>
</tr>
<tr>
<td>10:30-10:50</td>
<td>Solution thermodynamics of hydroxypyridinonato 4f and 5f complexes, Gauthier DeBlonde</td>
</tr>
<tr>
<td>10:50-11:00</td>
<td>BREAK</td>
</tr>
<tr>
<td>11:00-11:20</td>
<td>Electronic Structure in Lanthanide and Actinide Dialuminides from Al K-edge XAS, Stefan Minassian</td>
</tr>
<tr>
<td>11:20-11:40</td>
<td>Coordination of Macrocyclic Ligands to the Uranyl Ion, Trevor Hoytun</td>
</tr>
<tr>
<td>11:40-12 pm</td>
<td>Uranyl Reduction Facilitated by a Redox-Active, Donor-Expanded Dipyrrin, Nicola Bell</td>
</tr>
</tbody>
</table>

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**Molecular Magnetism 1, David Mills**  
**Room 004-Ground**

- **10:00 am**  
  **Designer Materials: Molecular Nano-Magnets Based on Lanthanides**, Muratree Murugesu

- **10:30-11:00 am**  
  **Synthesis and Understanding on Lanthanide Single-Molecule Magnets**, Bingwu Wang

- **11:00-11:30 am**  
  **Electronic Structure in Lanthanide and Actinide Dialuminides from Al K-edge XAS**, Stefan Minassian

- **11:30-12 pm**  
  **Coordination of Macrocyclic Ligands to the Uranyl Ion**, Trevor Hoytun

---

**Critical Materials 1, Gisele Azimi**  
**Room 150-154**

- **10:00 am**  
  **Technospheric Mining of Rare Earth Elements From Landfilled Stocks of Industrial Process Residues**, Gisele Azimi

- **10:30-11:00 am**  
  **Determining Computational Methods to Aid in Rare Earth Element Extractant Design**, Marilu Dick-Perez

- **11:00-11:30 am**  
  **Chemical Speciation of Rare Earths in Wyoming Powder River Basin Coal Fly Ashes**, Jinke Tang

- **11:30-12 pm**  
  **Evidence of REE Mobility and Fossil Ion Adsorbed REE Deposits in Pennsylvania**, Tracy Bank

---

**12:00 pm**  
**Boxed Lunch**  
First Floor Lobby

**12:00-6:00 pm**  
**Free time on your own, refer to pages 15-16 for recommendations**

**6:00 pm**  
**Reception & Bar**  
Reiman Gardens

**7:00-9:00 pm**  
**Rare Earth Research Conference 2017 Banquet**  
**Refer to page 24 for Banquet shuttle information**
<table>
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<tr>
<td>8:30 - 9:30 am</td>
<td>On the Periodicity of Oxidation States in d- and f-Element Compounds, Jun Li</td>
</tr>
<tr>
<td>9:30 - 10:00 am</td>
<td>Break</td>
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### Concurrent Sessions: 10:00 am - 12:00 pm

**Organometallics and Coordination Chemistry 3, Greg Nocton**

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<td>Lanthaneide Complexes for Luminescence and Singlet Oxygen Generation, Ana de Bettencourt Dias</td>
</tr>
<tr>
<td>10:30-10:50 am</td>
<td>Phosphinoborane Reactivity and Coordination Chemistry with Uranium and Lanthanides, Scott Dolby</td>
</tr>
<tr>
<td>10:50-11:00 am</td>
<td>Break</td>
</tr>
<tr>
<td>11:00-11:20 am</td>
<td>Chemistry at the Edge: Actinide Interactions with (poly)aminopolycarboxylates, Jenifer Braley</td>
</tr>
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<td>11:20-11:40 am</td>
<td>Reactivity Comparison of Complexes of 4fn5d1 and 4fn+1 Ln2+ ions with Cyclooctatetraene, Megan Fieser</td>
</tr>
<tr>
<td>11:40-12 pm</td>
<td>Applied Coordination Chemistry for the Separation of Rare Earth Elements Using Thermodynamic and Kinetic Controls, Eric Schelter</td>
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**Solid State Chemistry and Physics 2, Karah Knope**

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<tbody>
<tr>
<td>10:00-10:30 am</td>
<td>Interplay Between Localized and Itinerant Magnetism in Eu-Containing Pnictides of the ThCr2Si2 Structure Type, Michael Shatruk</td>
</tr>
<tr>
<td>10:30-10:50 am</td>
<td>Interaction of Neptunium with Crown Ether and Cucurbituril Macrocycles, Tori Forbes</td>
</tr>
<tr>
<td>11:00-11:20 am</td>
<td>Formation and Characterization of Prasaeodymium Oxides and Nitride-Oxides with Pr(V) Oxidation State, Mingfei Zhou</td>
</tr>
<tr>
<td>11:20-11:40 am</td>
<td>Probing the Bonding in Dimers of Tetravalent Cerium and Actinide Homologues, Valérie Vallet</td>
</tr>
<tr>
<td>11:40-12 pm</td>
<td>Covalent Stabilisation of Bonding in M(BTP)3 and M(BTPhen)2 (M = Ce-Lu, Cm, Am; BTP = bis( triazinyl)pyridine; BTPhen = bis(triazinyl)phenanthroline), Andy Kerridge</td>
</tr>
<tr>
<td>12:00-12:15 pm</td>
<td>Solution Structure Trumps Energy - Determining Factors for the Luminescent Properties of Multimetallic Kinetically Inert Lanthaneide(III) Complexes, Thomas Just Sorensen</td>
</tr>
</tbody>
</table>

**Theory, Computation and Spectroscopy 2, Andy Kerridge**

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<td>10:00-10:30 am</td>
<td>Early Actinide Superlatives, Nik Kaltsoyannis</td>
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<tr>
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<td>Formation and Characterization of Prasaeodymium Oxides and Nitride-Oxides with Pr(V) Oxidation State, Mingfei Zhou</td>
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</tbody>
</table>
**WINERIES & BREWERIES**

**DOWNTOWN AMES**
- Old Main Brewing Company, 316 Main St, Ames
  Locally owned restaurant and brewery featuring handcrafted entrees, fresh brewed beer and root beer.
- Torrent Brewing Company, 504 Burnett Ave, Ames
  Torrent Brewing Company was founded by home brewer Andy McCormick, longtime resident of Ames, Iowa. Opens at 4:30pm.
- Bella Viti, 323 Main St, Ames
  Iowa’s first self-serve wine bar. Beers, cocktails, retail sales, wireless Internet and appetizers available. Open daily at 4pm.

**NORTH AMES**
- Prairie Moon Winery and Vineyards, 3801 W 190th St, Ames
  Located 3 miles north of Ames. We are a family owned winery that makes all wines on premise and have 12 acres of our own vineyards. Stop in to try our statewide known Honeymoon Red.
- Alluvial Brewing Company, 3715 West 190th St, Ames
  Located 3 miles north of Ames. Our taproom features 10 unique varieties of craft beer dedicated to quality and taste, focused on celebrating our community and our unique piece of Iowa.

**SHOPPING CONT.**

**CAMPUSTOWN CONT.**

**SHOPPING**

**DOWNTOWN AMES**
- Worldly Goods, 223 Main St, Ames
  Worldly Goods is a retail store assisted by volunteers that showcases fair-trade items from around the world.
- Cicciotti Art Glass, 2306 258th St, Ames
  Unique Hand-blown glass work. Demonstrations and tours, gallery and gift shop.

**CAMPUSTOWN**
- Iowa State University Book Store, 2229 Lincoln Way, Ames
  Shop the Iowa State University Book Store for your Iowa State clothing and gift needs.
- Barefoot Campus Outfitter, 2306 Lincoln Way, Ames
  Barefoot Campus Outfitter - Your one stop shop for all your ISU fan gear!

**ARTS & CULTURE**

**DOWNTOWN AMES**
- Camputown Spirit, 2320 Lincoln Way, Ames
  Shop Camputown Spirit for licensed Cyclone apparel and spirit merchandise.
- Dogtown University, 217 Welch Ave, Ames
  Iowa State apparel. Unique designs. Custom screen printing and embroidery.

**NORTH AMES**
- North Grand Mall, 2801 Grand Ave, Ames
  JCPenney, Younkers, Kohl’s, T.J. Maxx and a lineup of your favorite national and local specialty stores.
- Cae’s Floral & Gifts, 2619 Northbridge Pkwy, Ames
  A full-service florist and home décor store.

**OUTDOOR ACTIVITIES**

**DOWNTOWN AMES**
- Coldwater Golf Links, 1400 S Grand Ave, Ames
  Unique in Iowa with its links-inspired design. Coldwater Golf Links is Ames’ premier facility.
- Veenker Memorial Golf Course, 2916 Veenker Dr., Ames
  A premier public golf facility owned and operated by ISU. Veenker is a beautiful, demanding and challenging course.
- Homewood Golf Course, 401 East 20th St and Duff Ave, Ames
  Homewood is a beautiful, well-groomed 9-hole, par 34 golf course in north Ames for players of all ages and abilities.
- Reiman Gardens, 1407 S. University Blvd, Ames
  17-acre public botanical garden including tropical plant conservatory, butterfly wing with hundreds of live butterflies, and gift shop.
- Ada Hayden Heritage Park, 5205 Grand Ave, Ames
  Available rentals include canoes and kayaks for $10/half hour or $13/one hour and stand-up paddleboards for $15/hour.
- Iowa Arboretum, 1875 Peach Ave, Madrid
  Enjoy thousands of trees, shrubs and flowers in this 378 acre public garden. Hike woodland and prairie trails. Grounds are open year-round, sunrise to sunset. Admission: $5 per car. Free to members.
- Ledges State Park, 1515 P Ave, Madrid
  The Ledges State Park contains a sandstone gorge carved by Pea’s Creek, a tributary of the Des Moines River.

**OUTSIDE AMES**
- Boone & Scenic Valley Railroad & James H. Andrew Museum, 222 10th St, Boone
  A historical, educational railroad museum providing excursion train rides across the beautiful Des Moines River Valley. Wednesday Excursion departs at 1:30pm. Tickets available online at www.bsrrc.com

**KEY**
- Easily accessible from Scheman via CyRide
- Walking distance from Scheman
- Most hotels in Ames loan out bicycles to their registered guests. Ask the front desk staff at your hotel for details.
- Drive 35 minutes or more outside Ames
  Check hours of operation on the day of your visit.
**Actinide Chemistry and Physics**

1. Anastasia Blake, Uranium Complexes with Neutral Soft-Donor Chalcogen and Borohydride Ligands
2. Korey Carter, Engaging the terminal promoting supramolecular assembly with the uranyl aza atoms
3. Bradley Cowie, An Effective Route to Highly Symmetric Mixed Actinide-Lanthanide Complexes via Reduction of [UO{	extsubscript{2}}]{\textsuperscript{3+}}
4. Shanna Estes, Molecular-Scale Insight into the Structure, Stability, and Electrochemistry of Ceria Nanoparticles
5. Emily Hardy, Pyridine Containing Schiff Base Ligands for Quick Detection of Actinium Contamination
7. Christopher Klug, Lanthanide Extraction by TBP into bis(trifluoromethylsulfonyl)imide Ionic Liquids
8. Artashes Migdissian, An experimental study of the stability of uranyl and U(IV) chloride aquo complexes at elevated temperatures: implications to the mobility of U in natural systems
9. Nicolas Reynier, Green processing of Canadian REE ores by combining attrition and lixiviation

**Bioanalysis and Medical Applications**

1. Lawrence Miller, C\textsubscript{6}TTHA: a versatile scaffold for designing lanthanide imaging probes.
2. Sylvie Pailloux, In vitro and in vivo detection of bacteria with lanthanide complexes
3. Josiane Sobrinho, Ratiometric nanothermometers based on Eu\textsuperscript{3+} and Tb\textsuperscript{3+} complexes grafted to pNIPAM

**Coordination Chemistry**

1. Amanda Bohanon, Syntheses and Crystal Structures of Lanthanide Dithiooxamide Complexes
2. Conrad Goodwin, f-Element Silylamide Complexes with Remarkable Bonding Motifs
3. Yusuchika Hasegawa, Effective Photo- and Triboluminescent Eu(III) Coordination Polymer with Triangular Spacers
4. Yuichi Hirai, Large spectral difference in triboluminescence and photoluminescence of Tb(III)/Eu(III) coordination polymers
5. Anna Kaczmarek, Coordination Chemistry
6. Sylvie Pailloux, Low Percentage Doping in Multinuclear Lanthanide Polyoxometalates (POMs) and their Use as Ratiometric Cryogenic Thermometers
7. Jennifer Wacker, U(IV) Chloride Complexes Isolated from Acidic Aqueous Media: UCl{	extsubscript{4}}\textsuperscript{-} and an Unprecedented U(H\textsubscript{2}O){\textsubscript{5}}Cl{	extsubscript{4}} Structural Unit
8. Anwar Al-Remaihi, Effective Photo- and Triboluminescent Eu(III) Coordination Polymer with Triangular Spacers
9. Anna Kaczmarek, Manganese and Structural Phase Transitions in Pr{	extsubscript{1-x}}Er{	extsubscript{x}} system
10. Rajiv Chouhan, Magnetocrystalline Anisotropy of Lanthanide Dialuminides
11. Renee B. Metzler, Electronic Structure, Magnetic Properties, and Magnetocrystalline Anisotropy of Lanthanide Dialuminides
12. Helena Khazdozian, Investigating Sm-Co Permanent Magnets as an Alternative to Dy-containing Nd-Fe-B in Direct-Drive Wind Turbines
13. Rajiv Chouhan, Mitigating Rare Earths Supply Risks: Insights from Japan’s Supply Structure
14. Francois Guillou, Solution Growth of New Rare-earth Poor Ce/Co/Mg Permanent Magnets
15. Marc Schmid, Breaking the Paradigm: Record Quindecim {15+} Charged Magnetic Ionic Liquids
16. Junfeng Wang, Novel highly symmetrical class of lanthanide tetrakis-complexes [NO{	extsubscript{2}}(H\textsubscript{2}O)]\textsubscript{4}Ln{	extsubscript{4}}(HL -1,3-bis (1,3-dimethyl-1H-pyrazol-4-yl)-1,3-propanediyl)-synthesis, crystal structure and unique photophysical properties
17. Eric Villa, Facile Linking of Lanthanide Cations with Soft Metals via Thioulsulfate
18. Naoko Sawada, Chiroptical and magneto-optical properties of chiral nona-nuclear Tb(III) clusters
19. Ann Willert, Low-temperature Electrochemical Deposition of Neodymium and Dysprosium Using Ionic Liquids
20. Masanori Yamamoto, Syntheses and Photophysical Properties of Novel Coordination Polymers Composed of Luminescent Europium and Metal Joint Blocks

**Critical Materials**

1. Michael C. Tringides, Hexagonal Lanthanide Phosphate Materials with Single Domain Magnetic Behavior
2. Michael C. Tringides, Refined oxygenation in hexagonal Lanthanide phosphate materials
5. Michael C. Tringides, Refined oxygenation in hexagonal Lanthanide phosphate materials
6. Michael C. Tringides, Refined oxygenation in hexagonal Lanthanide phosphate materials
8. Michael C. Tringides, Refined oxygenation in hexagonal Lanthanide phosphate materials
10. Michael C. Tringides, Refined oxygenation in hexagonal Lanthanide phosphate materials

**Magnetism**

1. Francois Guillou, Systematic investigation of the crystallographic, magnetic and calorimetric properties of Gd{	extsubscript{1-x}}Sc{	extsubscript{x}}Ge{	extsubscript{2}}Sb{	extsubscript{2}} compounds
2. Timothy Hackett, Electronic Structure, Magnetic Properties, and Magnetocrystalline Anisotropy of Lanthanide Dialuminides
3. Shane Harstad, Enhanced cooling power of ball-milled Gd{	extsubscript{5}}Si{	extsubscript{2}}
4. Manish K. Kashyap, Magnetocrystalline Anisotropy Driven Magnetostructural Transformations in RMn{	extsubscript{2}} (R = Tb, Ho)
5. Xubo Liu, Magnetic states and exchange interactions in GdNiAl
6. Sathish Malik, Magnetocrystalline Anisotropy Driven Magnetostructural Transformations in RMn{	extsubscript{2}} (R = Tb, Ho)
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12. Sathish Malik, Magnetocrystalline Anisotropy Driven Magnetostructural Transformations in RMn{	extsubscript{2}} (R = Tb, Ho)
Poster Session II
Tuesday, June 20, 2017

Catalysis
1. Matt Bailey, Photocatalytic Carbon–Carbon Bond Formation Using a Luminescent Eu(II)-Containing Complex and Visible Light
2. Xiaomei Liu, Electrocatalytic Performance of Ni, Fe, Sb Composite Anodes for Intermediate Temperature Solid Oxide Fuel Cell
3. Igor Slowin, Non-Innocent Behavior of Cerium Oxide Supports in Catalytic Conversions of Phenolics

General
4. Shinji Hirai, Innovative Use of Light Rare-earth Fibers as Antibacterial Agents
5. Jignasu Mehta, Thermo-acoustical properties of Eu(III) and Eu(II)-Lyszyme(H2O) in ternary system at atmospheric pressure

Organometallics
7. Nicholas Andreychuk, Reactivity of a Uranium(IV) Diallyl Complex Supported by a Rigid NON-Donor Ligand: Alkyl Exchange and C-H Activation of Pyridines
8. Kasun Botija, Synthesis and characterization of Homoleptic Bis(dimethylsilyl)benzyl Lanthane Compounds
10. Chad Palumbo, A New Class Of LnIII Complexes, [K(2.2.2-cryptand)][Li][N(2a,2b,3a,3b,4a,4b-tetramethyl-1,2,2,5,5,5-octamethylpyrroolidine)][mes]: Synthesis, Structure, Spectroscopy, and Theoretical Characterization
11. Smita Patnaik, Reactivity of homoleptic trialkyl lanthanum grafted on mesoporous silica
12. Bradley Schmidt, Activation and Polymerization Studies of Na[C(SiMe3)2]:J, as a Precatalyst

Phosphors and Lighting
13. Tarek Alammar, Luminescent Properties of Mechanochimically Synthesized Rare-Earth-Containing MIL-78 MOF
14. David Böhni, Luminescence and Energy Transfer in EuIII Activated Li, Ba, Tb, [MoO4]2–
15. Stefan Fischer, Investigation of Luminescence Properties of Ce3+–Doped Tb3(Al,Ga)SO4:Phosphor
17. Jonas Joos, Lanthane-activated ternary sulfides: design of materials and light-emitting devices
19. Kazu-yoshi Ogawara, Construction of Energy Diagrams for Ce3+ Coordinated with Six O2– Ions Based on First-Principles Calculations
20. Guo-jun Wang, Photoluminescent properties and energy level of RE (RE = Pr, Sm and Tb) in Y2Si2O7:S
22. Mark Williams-Wynn, Distribution of Yttrium and Europium in Organic–Aqueous Phases Containing Sulphuric Acid and HDEHP
23. Guang-xing Xiang, Effect of MnO2 in β-NaYF6: Eu2+ on the morphologies and enhanced luminescence of Eu2+ by inhibition the luminescence from Eu3+
24. Tao Xu, Study on the Crystal Face Design and Luminescence Properties of Monodispersed YAG Microcrystal

Physics
25. He Feng, Crystalization behavior and component optimization study on cerium doped (Gd0.5Y0.5)3(Si0.5O2) single crystal
26. Yong Han, Nucleation and Growth Kinetics for Near-Surface Intercalation of Rare Earth Islands in Graphite
27. Soham Manni, Magnetism in CePdSn and GdPdSn with distorted Kagomé lattice
28. Yutanna Mon, High-pressure synthesis and thermoelectric properties of partially filled skutterudite compounds Ce2-xCaxSb2-x

Solid State Chemistry
29. Viktor Balaie, Mechanochimic Synthesis: Novel Materials for Magnetic Cooling Applications
30. Horst Bormann, The α-manganese structure in RE, Mg2 type compounds
31. Alexander Brown, Synthesis and Structure of New Structure Type Ln52Fe25Sm49 (Ln = Gd, Tb, Dy)
32. Chris Calandra, R3Au3Pr3(γ = Y, Gd, Tb, Dy, Ho, Pr = Tb, Sm, Bi): A Link between Cu3Sn3 and Gd3Ag3
33. Katharina V. Dorn, Under Pressure: Synthesis and Crystal Structure of the Rare-Earth Metal(III) Hydroxide Oxidationstates(VI) RE(OH)[WO4](RE = Dy and Ho)
34. Christian Funk, Mixed-Valent Europium In Two ortho-Dioxoborates Derivatized with Soft Anions: Eu6[BO3]2(XX = 5 and Br)
35. Roman Gumeniuk, Are Remeika Phases Simply Cubic?
36. Ingo Hartenberg, Under Pressure: New Representatives of the Lanthanoid(III) Chloride Oxidationstates(VI) Li5[Cl2][WO4], with the Smaller Ln5+ Cations (Ln = Dy – Er)
37. Joshua Kohnne, Mechanistic Study of Crystal Growth Pathways of Pr123 Using Biopolymers
38. Hazel Lim, The citric acid leaching of rare earths from eudialyte
39. Qisheng Lin, Synthesis, Structure, Bonding and Properties of Pr2Ge3, Pr3CaGe2, and Pr2CaGe2
40. Wanyu Lv, Cd substitution in EuIn3Sb5 enhancing the thermoelectric performance
41. Arthur Mar, Quaternary Rare-Earth Chalcogenides
42. Yaroslav Mudryk, Enhancing Magnetic Functionality with Scandium in Gadolinium-based Rare-Earth Alloys
43. Jacob Rab, One-step synthesis of nonstructured RE–Nitriles from RE–fluorides via gas-solid mechanochemistry
44. Melissa Rhodohouse, In Search of New Rare-Earth Rich Intermetallics
45. James Ridenour, A Systematic Exploration of Rare-earth-p-halobenzoic acid-terpyridine Materials: Structural and Supramolecular Trends in Three Series of Molecular Complexes synthesized via Hydrothermal Methods
46. Thomas Schleid, Make Europium Great Again
47. Volodymyr Smetana, Structural Variations and Magnetism in the Transition-Metal-Rich Intermetallics Eu[T12]In7 (T = Cu, Ag, Au)
50. Elizabeth L. Kunz Wille, Innovative Use of Light Rare-earth Fibers as Antibacterial Agents
51. Yuttana Mona, High-pressure synthesis and thermoelectric properties of partially filled skutterudite compounds Ce2-xCaxSb2-x

Technological Applications
52. Youhei Kubota, Reversible Phase Transformation of y–CeS2 by Introducing Oxygen And Use of the Product as a Wave Absorber
53. Ann Lii-Rosales, Reactions of Dysprosium on the Graphite (0001) Surface
Somerset Area
*Refer to pages 22 and 23 for dinner shuttles

1. Brick City Grill (bar & grill)
   2704 Stange Rd, Ames
2. Wallaby’s Bar & Grille (bar & grill)
   2733 Stange Rd, Ames
3. El Azteca (Mexican food)
   2727 Stange Rd, Ames
4. The Cafe (American)
   2616 Northridge Pkwy, Ames
5. +39 Restaurant, Market & Cantina (Italian)
   2640 Stange Rd, Ames
   *Closed Mondays

Downtown Ames
*Refer to pages 22 and 23 for dinner shuttles

1. Olde Main (bar & grill)
   316 Main St, Ames
2. Bar La Tosca (Mediterranean & Italian)
   400 Main St, Ames
3. The Spice (Thai)
   402 Main St, Ames
4. Great Plains Sauce & Dough Company (pizza)
   230 Main St, Ames
   *Closes at 7 pm
5. Chocolaterie Stam (dessert)
   129 Main St, Ames
6. Aunt Maude’s (American)
   547 Main St, Ames
7. Cafe Diem, Coffee House (cafe & bakery)
   229 Main St, Ames
8. Depot Deli & Cookies, etc.
   (sandwiches & dessert)
   526 Main St, Ames
   *Closes at 7 pm

Shuttle Schedule
*Times are approximate

Sunday, June 18 (Evening)
Shuttles will depart Hilton Garden Inn/Sleep Inn on :45 and :15; Scheman on :00 and :30
Service between Hilton Garden Inn/Sleep Inn and Scheman
1.45 pm Shuttle service begins: Hilton Garden Inn/Sleep Inn - Bound for Scheman
2.30 pm Last Shuttle departs Scheman - Bound for Hilton Garden Inn/Sleep Inn

Monday, June 19
Shuttles will depart Hilton Garden Inn/Sleep Inn on :00 and :30; Scheman on :15 and :45
7:00 am Shuttle service begins: Hilton Garden Inn/Sleep Inn - Bound for Scheman
9:00 am Last Shuttle departs Hilton Garden Inn/Sleep Inn - Bound for Scheman
*No Mid-Day Shuttles Scheduled

Dinner On Your Own
Service for Scheman & Somerset Restaurant Neighborhood (See page 21) *Shuttle service limited to the following times
To Somerset
5.30 pm First Shuttle departs Scheman - Bound for Somerset
6.00 pm Second shuttle departs Scheman - Bound for Somerset
6.30 pm Last Shuttle departs Scheman - Bound for Somerset

From Somerset
6.45 pm First Shuttle departs Somerset - Bound for Scheman
7.15 pm Second Shuttle departs Somerset - Bound for Scheman
7.45 pm Last Shuttle departs Somerset - Bound for Scheman

Service for Scheman & Downtown (See page 21) *Shuttle service limited to the following times
To Downtown
5.30 pm First Shuttle departs Scheman - Bound for Downtown
6.00 pm Second shuttle departs Scheman - Bound for Downtown
6.30 pm Last Shuttle departs Scheman - Bound for Downtown

From Downtown
6.45 pm First Shuttle departs Downtown - Bound for Scheman
7.15 pm Second Shuttle departs Downtown - Bound for Scheman
8.00 pm Last Shuttle departs Downtown - Bound for Scheman

After Poster Session 1: Service to Hilton Garden Inn/Sleep Inn from Scheman
Shuttles will depart Scheman on:30 and :00
7.30 pm Shuttle service begins: Scheman - Bound for Hilton Garden Inn/Sleep Inn
8.30 pm Last Shuttle departs Scheman - Bound for Hilton Garden Inn/Sleep Inn

Iowa State University
Lincoln Way
Hilton Garden Inn
Sleep Inn & Suites
Shuttle Stop
**SHUTTLE SCHEDULE**

*Times are approximate*

<table>
<thead>
<tr>
<th><strong>Tuesday, June 20</strong></th>
<th><strong>Wednesday, June 21 (Morning)</strong></th>
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</thead>
<tbody>
<tr>
<td>Service from Hilton Garden Inn/Sleep Inn to Scheman</td>
<td>Service from Hilton Garden Inn/Sleep Inn to Scheman</td>
</tr>
<tr>
<td>Shuttle service begins: Hilton Garden Inn/Sleep Inn - Bound for Scheman</td>
<td>Shuttle service begins: Hilton Garden Inn/Sleep Inn - Bound for Scheman</td>
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<tr>
<td>7:00 am</td>
<td>7:00 am</td>
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<tr>
<td>9:00 am Last Shuttle departs Hilton Garden Inn/Sleep Inn - Bound for Scheman</td>
<td>12:45 pm Last Shuttle departs Scheman - Bound for Hilton Garden Inn/Sleep Inn</td>
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Dinner On Your Own

Service for Scheman & Somerset Restaurant Neighborhood (See page 21) *Shuttle service limited to the following times*

<table>
<thead>
<tr>
<th><strong>To Somerset</strong></th>
<th><strong>From Somerset</strong></th>
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<tbody>
<tr>
<td>5:30 pm First Shuttle departs Scheman - Bound for Somerset</td>
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<tr>
<td>6:00 pm Second Shuttle departs Scheman - Bound for Somerset</td>
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<tr>
<td>6:30 pm Last Shuttle departs Scheman - Bound for Somerset</td>
<td>7:45 pm Last Shuttle departs Somerset - Bound for Scheman</td>
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**To Downtown**

<table>
<thead>
<tr>
<th><strong>From Downtown</strong></th>
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<tbody>
<tr>
<td>6:45 pm First Shuttle departs Scheman - Bound for Downtown</td>
</tr>
<tr>
<td>7:15 pm Second Shuttle departs Scheman - Bound for Downtown</td>
</tr>
<tr>
<td>8:00 pm Last Shuttle departs Scheman - Bound for Downtown</td>
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</tbody>
</table>

After Poster Session 2: Service to Hilton Garden Inn/Sleep Inn from Scheman

*Shuttles will depart Scheman on :30 and :00*

<table>
<thead>
<tr>
<th><strong>Thursday, June 22 (Morning)</strong></th>
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<tbody>
<tr>
<td>Shuttle service begins: Scheman - Bound for Hilton Garden Inn/Sleep Inn</td>
</tr>
<tr>
<td>7:30 pm Shuttle service begins: Scheman - Bound for Hilton Garden Inn/Sleep Inn</td>
</tr>
<tr>
<td>9:30 pm Last Shuttle departs Scheman - Bound for Hilton Garden Inn/Sleep Inn</td>
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</tbody>
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**NOTES**