

## Curriculum Vitae

### Kenneth L. Knappenberger, Jr.

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#### General Information

University address: Chemistry and Biochemistry  
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#### Professional Preparation

2005–2008 Postdoctoral Research Fellow, University of California, Berkeley and Lawrence Berkeley National Laboratory.  
Research Advisor: Professor Stephen R. Leone.

2005 Ph.D., Pennsylvania State University. Major: Chemistry.  
Supervisor: Professor A. W. Castleman, Jr.

Knappenberger, K. L., Jr. (2005). *Photodetachment and Photoionization Probes of Cluster Dynamics*. (Doctoral dissertation, Pennsylvania State University). Retrieved from The Pennsylvania State University, University Park, PA.

2000 B.S., Lock Haven University of Pennsylvania. Major: Chemistry.

#### Professional Experience

2014–present Associate Professor, Florida State University.

2008–2014 Assistant Professor, Chemistry and Biochemistry, Florida State University.

2004–2005 Lubrizol Research Fellow, The Pennsylvania State University. Research Advisor: Professor A. W. Castleman, Jr.

- 2001–2004      Research Assistant, Chemistry, The Pennsylvania State University.
- 2000–2001      Teaching Assistant, Chemistry, The Pennsylvania State University.
- 1999–2000      Research and Development Internship, Avery-Dennison, Inc. Synthesis,  
Characterization of Emulsion Polymers for Application as Acrylic Adhesives.
- 1999            NSF Research Experience for Undergraduates Program, Bowling Green State  
University. Influence of Steric Hindrance on the Excited State Dynamics of  
Silicon Phthalocyanines. Research Advisor: Professor Michael A. J. Rodgers.

### **Visiting Professorship**

- 2015–2016      Dipartimento di Fisica, Politecnico di Milano.

### **Fellowships, Honors, Awards, and Prizes**

- Young Investigator Award, Inter-American Photochemical Society (2012).  
CAREER Award, National Science Foundation (2011).  
Young Investigator Award, Air Force Office of Scientific Research-DoD (2010).  
CRC First-Year Assistant Professor Award, Florida State University (2009).  
NRC/NIST Postdoctoral Research Fellowship (declined) (2005–2007).  
Research Excellence Award, Spectra-Physics Lasers (2005).  
Lubrizol Research Fellowship (2004–2005).  
Dalalian Research Fellowship (2004).

### **Editor for Refereed Journals**

- Associate Editor, *Journal of Nanoscience Letters* (2014-present)  
Guest Editor, *Journal of Physical Chemistry A* (2014), Special Issue: A.W. Castleman Festschrift  
Guest Editor, *Journal of Nanomaterials* (2011), Special Issue: Nanocrystals for Electronic and  
Optoelectronic Applications.

### **Advisory Boards**

- Lawrence Berkeley National Laboratory – The Molecular Foundry, Dept. of Energy  
(2012-present).  
Brookhaven National Laboratory – Center for Functional Nanomaterials, Dept. of Energy  
(2013-present).

### **Current Membership in Professional Organizations**

- American Association for the Advancement of Science  
American Chemical Society  
American Physical Society  
Inter-American Photochemical Society  
New York Academy of Science  
Optical Society of America  
The Coblenz Society

## Teaching

### Courses Taught

General Chemistry (CHM 1045)  
Honors General Chemistry I (CHM 1050)  
Physical Chemistry Seminar (CHM6590)  
Measurements and Data Analysis in Chemistry (CHM5175)  
Special Topics in Physical Chemistry (CHM5581)  
Physical Chemistry I (CHM4410)  
General Physical Chemistry (CHM3400)  
Experimental Methods in Physical Chemistry (CHM5585)  
Special Topics in Physical Chemistry: Modern Optical Spectroscopy (CHM5580)

### New Course Development

Measurement and Data Analysis in Chemistry (2012)  
Experimental Methods in Physical Chemistry (2010)  
Modern Optical Spectroscopy (2008)

### Postdoctoral Supervision

Chandra, M. (Nov 2010–May 2013).  
Blumling, D. E. (May 2009–Dec 2011).  
Priyam, A. (Jan–Dec 2009).

### Doctoral Committee Chair

Dowgiallo, Anne-Marie, graduate. (2013). *Hollow Gold Nanosphere Optical Transducers Studied Using Femtosecond Time-Resolved Laser Spectroscopy*.  
Lowman, C., graduate. (2012).  
Yi, C., doctoral candidate.  
Alamo, D., doctoral student.  
Green, T. D., doctoral student.  
Herbert, P., doctoral student.  
Jarrett, J., doctoral student.  
Williams, L. J., doctoral student.  
Zheng, H., doctoral student.

### **Doctoral Committee Member**

Keniley, L. K., graduate. (2013).  
Ruddy, B., graduate. (2013).  
Porter, C. M., graduate. (2012).  
Spann, A. L., graduate. (2012).  
Tfaily, M. M., graduate. (2012).  
Younes, A. H., graduate. (2012).  
Christian, J., doctoral candidate.  
Li, G., doctoral candidate.  
Abhyankar, N., doctoral student.  
Armstrong, R. E., doctoral student.  
Daykin, K., doctoral student.  
Eaton, T., doctoral student.  
Harris, W. T., doctoral student.  
Nakouzi, E., doctoral student.  
Wang, W., doctoral student.  
Yi, L., doctoral student.  
Zhang, Z., doctoral student.

### **Doctoral Committee University Representative**

Li, J., graduate. (2011).  
Cherian, J. G., doctoral candidate.

### **Master's Committee Member**

Porter, C. M., graduate. (2012).

### **Bachelor's Committee Chair**

Rodriguez, A., graduate. (2013). *Solution-Phase Single-Particle Spectroscopy (Honors Undergraduate Thesis)*.  
Golla, S., graduate. (2011). *Synthesis and Characterization of Monolayer-Protected Nanoclusters (Honors Undergraduate Thesis)*. [Shalini is currently enrolled in medical school]  
Attar, A. R., graduate. (2010). *Photoinduced Dynamics of CdTe Nanoparticles Studied by Time-Resolved Spectroscopy (Honors Undergraduate Thesis)*. [Andrew Attar has been especially successful, receiving two very competitive research awards: 1) The FSU Honors Thesis Award (2009-2010) and 2) ACC Research Fellowship. Andrew was also selected to attend and present his undergraduate thesis research at the 2010 Gordon Research Conference on Electron Donor-Acceptor Interactions: Electron Transfer Processes and Energy Conversion, held at Salva Regina University in Rhode Island on August 8-11, 2010. Andrew is currently enrolled in the University of California, Berkeley for graduate studies]

**Bachelor's Committee Member**

DeCiccio, D., graduate. (2012).  
Peoples, J., graduate. (2012).  
Natalie Bonus, graduate. (2011).  
Hart, A., student.  
Smith, K., student.

**Supervision of Student Research Not Related to Thesis or Dissertation**

Bojorquez, J. (Jan 2015-present)  
Abbott, A. (Jan 2015-present)  
Pelt, J. (Sept 2014-present)  
Wesson, W. (Sept 2014-present)  
Bousalis, D. (Jan–May 2013).  
Sweeney, D. (Jan–May 2013).  
Velazquez, E. (Jan–May 2013).  
Glade, L. (Sep 2011–Dec 2012).  
Klien, A. (Jan–Aug 2012).  
Lowman, C. A. (Jan 2010–Aug 2012).  
Douglas, A. (Jan–May 2012).  
Guest, T. (Sep 2011–May 2012).  
Kaster, J. (Sep 2011–May 2012).  
Mara, J. (Sep 2011–May 2012).  
Roger W. (Jan 2011–May 2012).  
Clark, E. (Sep–May 2011).  
Gustev, L. (Jan–May 2011).

Mocha, J. (Jan–May 2011).

Rozek, S. (Jan–May 2011).

Jarrett, J. (Jan 2009–May 2011).

Ramirez, D. (Sep 2009–May 2010).

Asvathavornvandit, N. (May–Aug 2009).

Sridawasdi, T. (May–Aug 2009).

Gilbertson, A. (Jan–May 2009).

Morgan, M. (Jan–May 2009).

Musto, D. (Sep 2008–May 2009).

### **Supervision of Visiting Scholars**

Knappenberger, K. L. (2011). *Research Experience for Teachers: Mr. Hakan Armagan*. National Science Foundation.

Knappenberger, K. L., Jr. (2011). *Research Experience for Teachers: Mr. Matthew Lane*. National Science Foundation.

## **Research and Original Creative Work**

### **Publications**

*Publications based on work carried out at Florida State University denoted with an asterisk (\*).*

### **Invited Journal Articles**

\*Knappenberger, K. L., Jr. (contract). Nanophotonic Dynamics Studied in High Magnetic Fields. *Physical Chemistry Chemical Physics*.

\*Knappenberger, K. L., Jr. (contract). Structurally Precise Nanoclusters and the Emergence of Structural Photonics. *Accounts of Chemical Research*.

\*Knappenberger, K. L., Jr. (contract). Nonlinear Optical Imaging of Single Photonic Nanostructures Using Phase-Locked Laser Pulse Replicas. *The Journal of Physical Chemistry C*.

\*Zhu, T., Clouthier, S. G., Ivanov, I., Knappenberger, K. L., Jr., Robel, I., & Zhang, F. (2012). Nanocrystals for Electronic and Optoelectronic Applications. *Journal of Nanomaterials*, 392742.

**Refereed Journal Articles (45 total; 2 accepted, 2 submitted)**

\*Compel, W. S., Wong, O. A., Chen, X., Yi, C., Geiss, R., Hakkinen, H., Knappenberger, K. L., Jr., & Ackerson, C. J. (submitted). *Dynamic Diglyme-Mediated Self-Assembly of Gold Nanoclusters*. Manuscript submitted for publication.

\*Yi, C., Tofanelli, M., Ackerson, C. J., & Knappenberger, K. L., Jr. (submitted). *The Influence of Passivating Ligands on Nanocluster Electron Dynamics*. Manuscript submitted for publication.

\*Biswas, S., Liu, X., Jarrett, J. W., Brown, D., Urbas, A., Knappenberger, K. L., Jr., Nealey, P., & Vaia, R. (in press). Chiro-optical Amplification by Plasmonic Nanolens Arrays Formed via Directed Assembly of Gold Nanoparticles. *Nano Letters*.

\*Yi, C., Zheng, H., Tvedte, L., Ackerson, C. J., & Knappenberger, K. L., Jr. (in press). Nanometals: Identifying the Onset of Metallic Relaxation Dynamics in Monolayer-Protected Gold Clusters Using Femtosecond Spectroscopy. *The Journal of Physical Chemistry C*.

\*Green, T. D., Yi, C., Zeng, C., McGill, S., Jin, R., & Knappenberger, K. L., Jr. (2014). Temperature-Dependent Photoluminescence of Structurally Precise Quantum-Confined Au<sub>25</sub>(SC<sub>8</sub>H<sub>9</sub>)<sub>18</sub> and Au<sub>38</sub>(SC<sub>12</sub>H<sub>25</sub>)<sub>24</sub>. *The Journal of Physical Chemistry A*, 118, 10611-10621.

\*Jarrett, J. W., Herbert, P. J., Dhuey, S., Schwartzberg, A. M., & Knappenberger, K. L., Jr. (2014). Chiral Nanostructures Studied Using Polarization-Dependent NOLES Imaging. *The Journal of Physical Chemistry A*, 118, 8393-8401.

\*Knappenberger, K. L., Jr., Johnson, G. E., & El-Sayed, M. A. (2014). A Tribute to Will Castleman. *The Journal of Physical Chemistry A*, 118, 8011-813.

\*Polinski, M., Garner, E., Maurice, R., Planas, N., Stritzinger, J., Parker, T., Green, T., Alekseev, E., Van Cleve, S., Depmeier, M., Gagliardi, L., Shatruk, M., Knappenberger, K. L., Jr., Albrecht-Schmitt, T., & Liu, G. (2014). Unusual Structure, Bonding and Properties in a Californium Borate. *Nature Chemistry*, 6, 387-392.

\*Sreenath, K., Yi, C., Knappenberger, K. L., Jr., & Zhu, L. (2014). Distinguishing Forster Resonance Energy Transfer and Solvent-Mediated Charge-Transfer Relaxation Dynamics in a Ainc(II) Indicator: A Femtosecond Time-Resolved Transient Absorption Spectroscopic Study. *Physical Chemistry Chemical Physics*, 16, 5088-5092.

- \*Blumling, D. E., McGill, S., & Knappenberger, K. L., Jr. (2013). The Influence of Applied Magnetic Fields on the Optical Properties of Zero- and One-Dimensional CdSe Nanocrystals. *Nanoscale*, *5*, 9049-9056.
- \*Chandra, M., & Knappenberger, K. L., Jr. (2013). Nanoparticle Surface Electromagnetic Fields Studied by Single-Particle Nonlinear Optical Spectroscopy. *Physical Chemistry Chemical Physics*, *15*, 4177-4182.
- \*Cordonez, A., Knappenberger, K. L., Jr., & Leone, S. R. (2013). Linking On-State Memory and Distributed Kinetics in Single Nanocrystal Blinking. *Journal of Physical Chemistry B*, *14*, 4241-4248.
- \*Jarrett, J. W., Chandra, M., & Knappenberger, K. L., Jr. (2013). Optimization of Nonlinear Optical Localization Using Electromagnetic Surface Fields (NOLES) Imaging. *Journal of Chemical Physics*, *138*(21), 214202/1-9.
- \*Knappenberger, K. L., Jr., Dowgiallo, A. M., Chandra, M., & Jarrett, J. W. (2013). Probing the Structure- Property Interplay of Plasmonic Nanoparticle Transducers Using Femtosecond Laser Spectroscopy (Invited, Peer-Reviewed Perspective). *Journal of Physical Chemistry Letters*, *4*, 1109-1119.
- \*Li, G., Hu, K., Yi, C., Knappenberger, K. L., Jr., Meyer, G. J., Gorelsky, S. I., & Shatruk, M. (2013). Panchromatic Light Harvesting and Hot Electron Injection by Ru(II) Dipyrrinates on TiO Surface. *The Journal of Physical Chemistry C*, *117*, 17399-17411.
- \*Williams, L., Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2013). Plasmonic Nanoparticle Networks Formed Using Iron Porphyrin Molecular Bridges. *Physical Chemistry Chemical Physics*, *15*, 11840-11845.
- \*Yi, C., Tofanelli, M. A., Ackerson, C. J., & Knappenberger, K. L. (2013). Optical Properties and Electronic Energy Relaxation of Metallic Au<sub>144</sub>(SR)<sub>60</sub> Nanoclusters. *Journal of the American Chemical Society*, *135*, 18222-18228.
- \*Blumling, D. E., Tokumoto, T., McGill, S., & Knappenberger, K. L., Jr. (2012). Temperature- and Field-Dependent Energy Transfer in CdSe Nanocrystal Aggregates Studied by Magneto-photoluminescence Spectroscopy. *Physical Chemistry Chemical Physics*, *14*, 11051-11059.
- \*Chandra, M., Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2012). Magnetic Dipolar Interactions in Solid Gold Nanosphere Dimers. *Journal of the American Chemical Society*, *134*, 4477-4480.
- \*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2012). Influence of Confined Fluids on Nanoparticle-to-Surroundings Energy Transfer. *Journal of the American Chemical Society*, *134*, 19393-19400.



- \*Green, T. D., & Knappenberger, K. L., Jr. (2012). Relaxation Dynamics of Au<sub>25</sub>L<sub>18</sub> Nanoclusters Studied by Femtosecond Time-resolved Near Infrared Transient Absorption Spectroscopy. *Nanoscale*, 4, 4111-4118.
- \*Ji, X., Palui, G., Avellini, T., Na, H. B., Yi, C., Knappenberger, K. L., Jr., & Mattoussi, H. (2012). On the pH-dependent Quenching of Quantum Dot Photoluminescence by Redox Active Dopamine. *Journal of the American Chemical Society*, 134, 6006-6017.
- \*Wheeler, D., Green, T. D., Wang, H., Fernandez-Lopez, C., Liz-Marzan, L., Zou, S., Knappenberger, K. L., Jr., & Zhang, J. Z. (2012). Optical Properties and Coherent Vibrational Oscillations of Gold Nanostars. *Chemical Physics Letters*, 543, 127-132.
- \*Attar, A. R., Blumling, D. E., & Knappenberger, K. L., Jr. (2011). Photodissociation of thioglycolic acid studied by femtosecond time-resolved transient absorption spectroscopy. *Journal of Chemical Physics*, 134, 0254514 (1-8).
- \*Blumling, D. E., Tokumoto, T., McGill, S., & Knappenberger, K. L., Jr. (2011). Magneto-photoluminescence Properties of Colloidal CdSe Nanocrystal Aggregates. *Journal of Physical Chemistry C*, 115, 14517-14525.
- \*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2011). Ultrafast Electron-Phonon Coupling in Hollow Gold Nanospheres. *Physical Chemistry Chemical Physics*, 13, 21585-21592.
- \*Dowgiallo, A. M., Schwartzberg, A. M., & Knappenberger, K. L., Jr. (2011). Structure-dependent Coherent Acoustic Vibrations of Hollow Gold Nanospheres. *Nano Letters*, 11, 3258-3262.
- \*Stagg, S. M., Knappenberger, K. L., Jr., Dowgiallo, A. M., & Chandra, M. (2011). Three-Dimensional Interfacial Structure Determination of Hollow Gold Nanosphere Aggregates. *Journal of Physical Chemistry Letters*, 23, 2946-2950.
- \*Chandra, M., Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2010). Controlled Plasmon Resonance Properties of Hollow Gold Nanosphere Aggregates. *Journal of the American Chemical Society*, 132, 15782-15789.
- \*Chandra, M., Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2010). Two-Photon Rayleigh Scattering from Isolated and Aggregated Hollow Gold Nanospheres. *Journal of Physical Chemistry C*, 114, 19971-19978.
- \*Priyam, A., Blumling, D. E., & Knappenberger, K. L., Jr. (2010). Synthesis, Characterization, and Self Organization of Dendrimer-Encapsulated HgTe Quantum Dots. *Langmuir*, 26, 10636-10644.

- \*Knappenberger, K. L., Jr., Schwartzberg, A. M., Dowgiallo, A. M., & Lowman, C. A. (2009). Electronic Relaxation Dynamics in Isolated and Aggregated Hollow Gold Nanospheres. *Journal of the American Chemical Society*, *131*, 13892-13893.
- Knappenberger, K. L., Jr., Wong, D. B., Romanyuk, Y. E., Wolcott, A., Zhang, J. Z., & Leone, S. R. (2008). Excitation wavelength-dependent fluorescence blinking statistics of single CdSe nanorods studied by fluorescence microscopy. *ACS Nano*, *2*, 2143.
- Knappenberger, K. L., Jr., Lerch, E. W., Wen, P., & Leone, S. R. (2007). Stark-assisted population control of coherent CS<sub>2</sub> 4f and 5p Rydberg wavepacket dynamics studied by femtosecond time-resolved photoelectron spectroscopy. *Journal of Chemical Physics*, *127*, 124318.
- Knappenberger, K. L., Jr., Sobhy, M. A., Jones, C. E., Jr., Clayborne, P., Khanna, S. N., & Castleman, A. W., Jr. (2007). Anion Photoelectron Spectroscopy and Density Functional Investigation of Di-niobium carbon Clusters. *ACS Nano*, *1*, 319.
- Knappenberger, K. L., Jr., Wong, D. B., Romanyuk, Y. E., & Leone, S. R. (2007). Excitation wavelength-dependent fluorescence intermittency in CdSe/ZnS quantum dots studied by fluorescence microscopy. *Nano Letters*, *7*, 3869.
- Knappenberger, K. L., Jr., Jones, C. E., Jr., Sobhy, M. A., Iordanov, I., Sofo, J., & Castleman, A. W., Jr. (2006). Anion Photoelectron Spectroscopy and Density Functional Investigation of Vanadium Carbide Clusters. *Journal of Physical Chemistry A*, *110*, 12814-12821.
- Knappenberger, K. L., Jr., Lerch, E. W., Wen, P., & Leone, S. R. (2006). Coherent polyatomic dynamics studied by femtosecond time-resolved photoelectron spectroscopy: Dissociation of vibrationally excited CS<sub>2</sub> in the 6s and 4d Rydberg states. *Journal of Chemical Physics*, *125*, 174314.
- Knappenberger, K. L., Jr., Sobhy, M. A., Jones, C. E., & Castleman, A. W., Jr. (2006). Versatile cluster-based photoelectron spectrometer. *Review of Scientific Instruments*, *77*, 123901.
- Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (2005). Photodissociation of (SO<sub>2</sub>)<sub>m</sub>(H<sub>2</sub>O)<sub>n</sub> Clusters employing Femtosecond Pump-Probe Spectroscopy. *Journal of Chemical Physics*, *122*, 154306.
- Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (2004). Photodissociation of SO<sub>2</sub>: the E state Revisited. *Journal of Physical Chemistry A*, *108*, 9-14.
- Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (2004). The Influence of Cluster Formation on the Dissociation Dynamics of SO<sub>2</sub>. *Journal of Chemical Physics*, *121*, 3540-3549.

Cheng, G., Peng, X., Hao, G., Kennedy, V. O., Ivanov, I. N., Knappenberger, K. L., Jr., Hill, T. J., Rodgers, M. A. J., & Kenney, M. E. (2003). Synthesis, Photochemistry, and Electrochemistry of a Series of Phthalocyanines with Graded Steric Hindrance. *Journal of Physical Chemistry A*, *107*, 3503-3514.

Leskiw, B. D., Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (2002). Relaxation Dynamics of Electronically Excited Vanadium-Carbon Clusters: Elucidation of Met-Car. *Journal of Chemical Physics*, *117*, 8321-8326.

### Invited Books

\*Knappenberger, K. L., Jr. (contract). *Structural Photonics*. Manuscript under contract for publication, Pan-Stanford Publishing.

### Refereed Book Chapters

Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (2006). Fitting Multi-component Cluster Dynamics. In A. W. Castleman Jr., & M. L. Kimble (Eds.), *Femtochemistry VII: Fundamental ultrafast processes in chemistry, physics, and biology* (pp. 105-108). Elsevier: Amsterdam.

Knappenberger, K. L., Jr., Gilb, S., Stavros, V. G., Lerch, E. W., Torres, E. A., Strasser, D., Lau, L., & Leone, S. R. (2006). Ultrafast wave packet, coherent control and dissociation dynamics. In A. W. Castleman Jr., & M. L. Kimble (Eds.), *Femtochemistry VII: Fundamental ultrafast processes in chemistry, physics, and biology* (pp. 14-22). Elsevier: Amsterdam.

Knappenberger, K. L., Jr., Jones, C. E., Jr., Sobhy, M. A., & Castleman, A. W., Jr. (2006). Electron Dynamics of Metal Carbon Clusters. In A. W. Castleman Jr., & M. L. Kimble (Eds.), *Femtochemistry VII: Fundamental ultrafast processes in chemistry, physics, and biology* (pp. 33-38). Elsevier: Amsterdam.

Wisniewski, E., Leskiw, B., Hurley, S., Dermota, T., Hydutsky, D., Knappenberger, K. L., Jr., Harshbarger, M. A., & Castleman, A. W., Jr. (2002). Dynamics of Gas Phase Clusters: Insights to Size and Solvation Effects on Electronic Relaxation and Hydrogen Transfer. In A. Donhal, & J. Santamaria (Eds.), *Femtochemistry and Femtobiology: Ultrafast Dynamics in Molecular Science* (pp. 21-41). World Scientific.

## Refereed Proceedings

\*Jarrett, J. W., & Knappenberger, K. L., Jr. (submitted). *Plasmonic nanoparticle transducers studied using single-particle nonlinear optical spectroscopy*. Manuscript submitted for publication.

Hydutsky, D. P., Bergeron, D. E., Dermota, T. E., Stairs, J. R., Knappenberger, K. L., Jr., Davis, K. M., Jones, C. E., Sobhy, M. A., Bianco, N. J., Peppernick, S. J., & Castleman, A. W. (2005). "Fundamental Cluster Studies of Materials and Atmospheric Chemistry". In P. Jena, S. N. Khanna, & B. K. Rao (Eds.), *Clusters and Nano-Assemblies, Physical and Biological Systems, ISCANA Proceedings* (pp. 81-87). Hackensack, NJ: World Scientific Publishing Co. Pte. Ltd.

## Presentations

### 139 total presentation (113 from FSU; 84 invited)

*Presentations based on work carried out at Florida State University denoted with an asterisk (\*).*

### Invited Papers at Conferences

\*Knappenberger, K. L. (presented 2014). *Superatom Photochemistry and the Search for the Incipient Plasmon*. Paper presented at American Chemical Society National Meeting, American Chemical Society, Dallas, Texas, USA. (National)

\*Knappenberger, K. L., Jr. (presented 2013, August). *Plasmonic nanoparticle transducers studied using single-particle nonlinear optical spectroscopy*. Paper presented at 2013 Optics and Photonics, SPIE, San Diego, CA, USA. (International)

### Invited Keynote and Plenary Presentations at Conferences

\*Knappenberger, K. L., Jr. (presented 2014, July). *Optical Properties and Electron Dynamics in Structurally Precise Metal Nanostructures*. Keynote presentation at Partnership for Research and Education in Materials, National Science Foundation, Jackson, MS. (National)

### Invited Presentations at Conferences

\*Knappenberger, K. L., Jr. (accepted). *Carrier Dynamics of Structurally Precise Nanometals Using Time-Resolved Magneto-optical Spectroscopy*. Presentation to be given at 250th ACS National Meeting and Exposition, American Chemical Society (COLL), Boston, MA. (National)

- \*Knappenberger, K. L., Jr. (accepted). *Imaging Nanoscale Energy Transduction at the Limits of Temporal Resolution and Spatial Accuracy*. Presentation to be given at 249th ACS National Meeting and Exposition, American Chemical Society (COLL), Denver, CO. (National)
- \*Knappenberger, K. L., Jr. (accepted). *Probing Magneto-Plasmonic Phenomena at the Single-Nanostructure Level*. Presentation to be given at 249th ACS National Meeting and Exposition, American Chemical Society (Physical), Denver, CO. (National)
- \*Knappenberger, K. L., Jr. (accepted). *Monolayer-Protected Nanoclusters: Structurally Precise Building Blocks for Spintronic Applications*. Presentation to be given at 249th ACS National Meeting and Exposition, American Chemical Society (INORG), Denver, CO. (National)
- \*Knappenberger, K. L., Jr. (accepted). *Electronic Dynamics in Monolayer-Protected Clusters Studied Using Ultrafast Magneto-Optical Spectroscopy*. Presentation to be given at 4th International Symposium on Monolayer Protected Clusters (ISMPC15), NA, Fuji, Shizuoka, Japan. (International)
- \*Jarrett, J. W., & Knappenberger, K. L., Jr. (presented, January 2015). *Single-nanoparticle Imaging with Ultrafast Time Resolution*. Presentation to be given at 2015 Southeast Ultrafast Conference, SEUFC, Tallahassee, FL. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2014, November). *Nonlinear Optical Imaging of Plasmonic Nanostructures at the Limits of Temporal Resolution and Spatial Precision*. Presentation at Energy, Materials, and Nanotechnology, American Physical Society, Orlando, FL. (International)
- \*Knappenberger, K. L., Jr. (presented 2014, July). *Nonlinear Optical Imaging of Plasmonic Nanostructures Using Phase-Stabilized Laser Pulse Replicas*. Presentation at Southern School's Conference for Chemists, Association of Southern Schools, Jackson, MS. (Regional)
- \*Knappenberger, K. (presented 2014, May). *Spectroscopy and State-resolved Dynamics in Structurally Precise and Catalytically Relevant Metal Nanoclusters*. Poster presentation at Molecular Dynamics and Theoretic Chemistry Program Review, Air Force Office of Scientific Research, Arlington, VA. (National)
- \*Knappenberger, K. L., Jr. (presented 2014, March). *Superatom Photochemistry and the Search for the Incipient Plasmon*. Presentation at 247th ACS National Meeting, American Chemical Society, Dallas, TX. (National)

- \*Knappenberger, K. L., Jr. (presented 2014, January). *An Ultrafast Look at Unique Nanaoscale Confinement Effects*. Presentation at Southeast Ultrafast Conference, Louisiana State University, Louisiana State University, Baton Rouge, Louisiana. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2013, January). *Nanoparticle Optical Properties and Relaxation Dynamics Studied Using Single-Particle Spectroscopy*. Presentation at 22nd Winter Inter-American Photochemical Society Meeting, Inter-American Photochemical Society, Sarasota, FL. (International)
- \*Knappenberger, K. L., Jr. (presented 2012, October). *Nanoscale Optical Properties and Dynamics Studied Using Laser-based Spectroscopy*. Presentation at Frontiers in Optics: the 96th Annual Meeting, The Optical Society of America, Rochester, NY. (National)
- \*Chandra, M., & Knappenberger, K. L., Jr. (presented 2012, May). *Magnetic-Dipolar Coupling in Gold Nanosphere Dimers*. Presentation at Florida Annual Meeting and Exposition (FAME), American Chemical Society, Florida Section, Palm Harbor, FL. (State)
- \*Knappenberger, K. L., Jr. (presented 2012, March). *Structure-specific Plasmonics*. Presentation at Florida Regional Meeting, American Vacuum Society, Orlando, FL. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2012, January). *Ultrafast Nanoscale Dynamics*. Presentation at Southeast Ultrafast Conference 2012, University of Central Florida, Orlando, FL. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2011, January). *Ultrafast Structure-Specific Noble Metal Nanoscale Dynamics*. Presentation at Southeast Ultrafast Conference 2011, Oak Ridge National Laboratory, Oak Ridge, TN. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2010, June). *Surface Plasmon Probing of Electronic Energy Relaxation and Interparticle Coupling in Hollow Gold Nanospheres*. Presentation at Noble Metal Gordon Research Conference, Mount Holyoke College, South Hadley, MA. (International)
- \*Chandra, M., & Knappenberger, K. L., Jr. (presented 2010, May). *Quadratic Optical Nonlinearity in Hollow Gold Nanospheres and their Aggregates*. Presentation at Florida Annual Meeting and Exposition (FAME), American Chemical Society, Florida Section, Palm Harbor, FL. (State)
- \*Knappenberger, K. L., Jr. (presented 2010, May). *Surface Plasmon Probing of Electronic Energy Relaxation in Metal Nanospheres*. Presentation at Florida Annual Meeting and Exposition (FAME), American Chemical Society, Florida Section, Palm Harbor, FL. (State)
- \*Knappenberger, K. L. (presented 2010, March). *Surface Plasmon Probing of Electronic Energy Relaxation in Metal Nanoparticles*. Presentation at ACS National Meeting, American Chemical Society, San Francisco, CA. (National)

- \*Knappenberger, K. L., Jr. (presented 2010, March). *Shape-specific Spin-polarized CdSe Exciton Dynamics*. Presentation at March Meeting, the American Physical Society, Portland, OR. (National)
- \*Knappenberger, K. L., Jr. (presented 2009, December). *Surface Plasmon Probing of Electronic Energy Relaxation in Metal Nanoparticles*. Presentation at New Directions in Microscopy: Sharper, Deeper, Smarter, Duke University, Durham, NC. (National)
- \*Knappenberger, K. L., Jr. (presented 2009, January). *Nanoscale Dynamics*. Presentation at Southeast Ultrafast Conference 2009, CREOL, Orlando, FL. (Regional)
- \*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (presented 2009). *Interparticle Electromagnetic Coupling in Hollow Gold Nanoparticles*. Presentation at Florida Annual Meeting and Exposition (FAME), American Chemical Society, Florida Section, Orlando, FL. (State)
- Knappenberger, K. L., Jr. (presented 2007, August). *Spectroscopic investigation of CdSe nanocrystals: Implications for single-particle devices*. Presentation at Hot Topic, Gordon Research Conference on Clusters, Nanocrystals and Nanostructures, Mount Holyoke University, South Hadley, MA. (International)
- Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2005, July). *Electron Dynamics of Metal-Carbon Clusters*. Presentation at Femtochemistry VII, Femtochemistry, Washington, D.C. (International)
- Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2004). *Photodissociation of SO<sub>2</sub>*. Presentation at ACS National Meeting, American Chemical Society, Division of Geochemistry, Philadelphia, PA. (National)

### **Invited Presentations at Symposia**

- \*Knappenberger, K. L., Jr., & Yi, C. (presented 2013, October). Optical Properties and Electronic Energy Relaxation of Metallic Au<sub>144</sub>(SR)<sub>60</sub> Nanoclusters. In *Florida Inorganic and Materials Symposium (FIMS) 2013*. Presentation at the meeting of University of Florida. (State)
- \*Knappenberger, K. L., Jr. (presented 2013, July). Nanocluster Photochemistry: New Insights into the Unusual Behavior of Unique Nanomaterials. In Professors Chris Ackerson, Christine Aikens, and Terry Bigioni (Chair), *International Symposium on Monolayer-Protected Clusters*. Presentation at the meeting of ISMPC13, Pingree Park, CO, USA. (International)
- \*Green, T. D., & Knappenberger, K. L., Jr. (presented 2012, November). Electron Dynamics in Quantum-Confined Gold Nanoclusters. In *Southwest Regional ACS Meeting*. Presentation at the meeting of American Chemical Society, Baton Rouge, LA. (Regional)

- \*Jarrett, J. W., & Knappenberger, K. L., Jr. (presented 2012, November). Magnetic-Dipoles in Plasmonic Nanoparticle Assemblies Studied Using Single-Particle Nonlinear Optical Spectroscopy. In *Southwest Regional ACS Meeting*. Presentation at the meeting of American Chemical Society, Baton Rouge, LA. (Regional)

### Refereed Presentations at Conferences

- \*Green, T. D., & Knappenberger, K. L., Jr. (presented 2014, March). *Temperature- and Field-Dependent Photoluminescence of Gold Nanoclusters*. Poster presentation at 247th ACS National Meeting, American Chemical Society, Dallas, TX. (National)
- \*Jarrett, J. W., & Knappenberger, K. L., Jr. (presented 2014, March). *Studying Nanoparticle Transducers with Nonlinear Optical Localization Using Electromagnetic Surface Fields (NOLES) Imaging*. Presentation at 247th National ACS Meeting, American Chemical Society, Dallas, TX. (National)
- \*Williams, L. J., & Knappenberger, K. L., Jr. (presented 2014, March). *Plasmonic Nanoparticle Networks Formed Using Iron Porphyrin Bridges: Solvation Influence on Charge Transfer Relaxation Processes*. Poster presentation at 247th National American Chemical Society Meeting, American Chemical Society. (National)
- \*Yi, C., & Knappenberger, K. L., Jr. (presented 2014, March). *Optical properties and electronic energy relaxation of monolayer-protected nanoclusters*. Poster presentation at 247th ACS National Meeting 2014, American Chemical Society. (National)
- \*Yi, C., & Knappenberger, K. L., Jr. (presented 2014, January). *Optical Properties and Electronic Energy Relaxation of Metallic Au<sub>144</sub>(SR)<sub>60</sub> Nanoclusters*. Poster presentation at 17th Annual Southeast Ultrafast Conference (SEUFC) 2013, Louisiana State University. (Regional)
- \*Knappenberger, K. L., Jr., & Chandra, M. (presented 2013, July). *Magnetic-dipolar Contributions to the Nonlinear Optical Properties of Plasmonic Nanoparticle Assemblies*. Presentation at Nonlinear Optics 2013, Optical Society of America, Kohala Coast, HI, USA. (International)
- \*Knappenberger, K. L., Jr., & Jarrett, J. W. (presented 2013, July). *Beating the Diffraction Limit by Nonlinear Optical Localization Using Electromagnetic Surface Fields (NOLES) Imaging*. Presentation at Nonlinear Optics 2013, Optical Society of America, Kohala Coast, HI, USA. (International)
- \*Jarrett, J. W., & Knappenberger, K. L., Jr. (presented 2013, May). *Plasmonic Nanoparticles Studied by Single-particle Spectroscopy*. Presentation at 89th Florida Annual Meeting and Exposition (FAME), American Chemical Society, Palm Harbor, FL. (State)



- \*Yi, C., & Knappenberger, K. L., Jr. (presented 2013, May). *Ultrafast Electron Dynamics of Ligand-protected Metal Nanoclusters*. Presentation at 89th Florida Annual Meeting and Exposition (FAME), American Chemical Society. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2013, April). *Plasmonic Transducers Studied Using Single-Particle Nonlinear Optical Spectroscopy*. Presentation at ACS National Meeting, American Chemical Society, New Orleans, LA. (National)
- \*Knappenberger, K. L., Jr., Chandra, M., & Dowgiallo, A. M. (presented 2012, August). *Magnetic-Dipolar Interactions in Solid Gold Nanosphere Dimers*. Poster presentation at ACS National Meeting, American Chemical Society, Philadelphia, PA. (National)
- \*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (presented 2011, August). *Ultrafast Electron-Phonon Coupling in Hollow Gold Nanospheres*. Poster presentation at ACS National Meeting, American Chemical Society, Denver, CO. (National)
- \*Knappenberger, K. L., Jr. (presented 2011, July). *Structure-specific Ultrafast Nanoscale Dynamics*. Poster presentation at Femtochemistry X, Femtochemistry, Madrid, Spain. (International)
- \*Blumling, D. E., & Knappenberger, K. L., Jr. (presented 2010, March). *Magneto-optical Spectroscopy of Semiconducting Nanostructures*. Poster presentation at ACS National Meeting, American Chemical Society, San Francisco, CA. (National)
- \*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (presented 2010, March). *Interparticle Electromagnetic Coupling in Hollow Gold Nanoparticles*. Poster presentation at ACS National Meeting, American Chemical Society, San Francisco, CA. (National)
- Knappenberger, K. L., Jr., & Leone, S. R. (presented 2007). *Wavelength-dependent study of single CdSe nanoparticle fluorescence blinking*. Presentation at Frontiers in Optics/Laser Science, National Meeting of the Optical Society of America, San Jose, CA. (National)
- Knappenberger, K. L., Jr., Lerch, E. W., Wen, P., & Leone, S. R. (presented 2007). *Coherent molecular and nanoscale dynamics*. Poster presentation at 54th Annual Meeting, Western Spectroscopy Association, Asilomar Conference Center, Pacific Grove, CA. (Regional)
- Knappenberger, K. L., Jr., Wong, D. B., Wolcott, A., Zhang, J. Z., & Leone, S. R. (presented 2007). *Excitation wavelength-dependent blinking of single CdSe nanoparticles*. Poster presentation at ACS National Meeting, American Chemical Society, Boston, MA. (National)
- Knappenberger, K. L., Jr., & Leone, S. R. (presented 2006). *Coherent Polyatomic Dynamics*. Poster presentation at 53rd Annual Meeting, Western Spectroscopy Association, Asilomar Conference Center, Pacific Grove, CA. (Regional)

Knappenberger, K. L., Jr., Lerch, E. W., Wen, P., & Leone, S. R. (presented 2006). *Coherent polyatomic dynamics studied by femtosecond time-resolved photoelectron spectroscopy*. Poster presentation at ACS National Meeting, American Chemical Society, San Francisco, CA. (National)

Knappenberger, K. L., Jr., & Castelman, A. W., Jr. (presented 2004, March). *The Influence of Cluster Formation on the Dissociation of SO<sub>2</sub>*. Poster presentation at APS Annual March Meeting, Division of Chemical Physics, Special Topics Poster Session: Physics And Chemistry of the Atmosphere, American Physical Society, Montreal, Quebec. (International)

Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2004). *Photodissociation of Sulfur Dioxide and Sulfur Dioxide Clusters*. Poster presentation at ACS National Meeting, Division of Environmental Chemistry, American Chemical Society, Philadelphia, PA. (National)

### Refereed Presentations at Symposia

\*Green, T. D., & Knappenberger, K. L., Jr. (presented 2012, November). Electron Dynamics in Quantum-Confined Gold Nanoclusters. In *Southwest Regional ACS Meeting*. Presentation at the meeting of American Chemical Society, Baton Rouge, LA. (Regional)

Knappenberger, K. L., Jr., Wong, D. B., Wolcott, A., Zhang, J. Z., & Leone, S. R. (presented 2007). Excitation wavelength-dependent blinking statistics in CdSe/ZnS quantum dots studied by fluorescence microscopy. In *Berkeley Nano Forum*. Poster presentation at the meeting of Berkeley Nanotechnology Club, Berkeley, CA. (Regional)

Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2003). Photodissociation of Sulfur Dioxide-Water Clusters: Implications for Acid Rain. In *6th Annual Environmental Chemistry Symposium*. Poster presentation at the meeting of Center for Environmental Chemistry and Geochemistry, The Pennsylvania State University, University Park, PA. (Local)

Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2003). Photodissociation of (SO<sub>2</sub>)<sub>m</sub> and (SO<sub>2</sub>)<sub>m</sub>(H<sub>2</sub>O)<sub>n</sub> Clusters. In *The International Symposium on Cluster Assemblies and Nanoscale Materials*. Poster presentation at the meeting of Society for Cluster Assembled Materials, Richmond, VA. (International)

Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2001). Femtosecond Dynamics of Vanadium Met-Cars. In *Consortium for Nanoscale Assemblies*. Poster presentation at the meeting of University of Maryland, College Park, MD. (Local)

### Nonrefereed Presentations at Conferences

- \*Green, T. D., Yi, C., Zeng, C., Jin, R., McGill, S., & Knappenberger, K. L., Jr. (presented 2015, January). *Temperature-Dependent Photoluminescence of Structurally-Precise Quantum-Confined Au<sub>25</sub>(SC<sub>8</sub>H<sub>9</sub>)<sub>18</sub> and Au<sub>38</sub>(SC<sub>12</sub>H<sub>25</sub>)<sub>24</sub> Metal Nanoparticles*. Poster presentation at 18<sup>th</sup> Annual Southeast Ultrafast Conference (SEUFC) 2015, Florida State University. (Regional)
  
- \*Williams, L. J., & Knappenberger, K. L., Jr. (presented 2015, January). *Solvent-Dependent Electronic Energy Relaxation in Iron Porphyrins Studied Using Femtosecond Transient Absorption Spectroscopy*. Poster presentation at 18<sup>th</sup> Annual Southeast Ultrafast Conference (SEUFC) 2015, Florida State University. (Regional)
  
- \*Zheng, H., Yi, C., & Knappenberger, K. L., Jr. (presented 2015, January). *Nanometals: Identifying the Onset of Metallic Relaxation Dynamics in Monolayer-Protected Gold Clusters Using Femtosecond Spectroscopy*. Poster presentation at 18<sup>th</sup> Annual Southeast Ultrafast Conference (SEUFC) 2015, Florida State University. (Regional)
  
- \*Jarrett, J. W., Herbert, P. J., Dhuey, S., Schwartzberg, A. M., & Knappenberger, K. L., Jr. (presented 2015, January) *Polarization-Dependent Optical Imaging of Chiral Plasmonic Nanostructures*. Poster presentation at 18<sup>th</sup> Annual Southeast Ultrafast Conference (SEUFC) 2015, Florida State University. (Regional)
  
- \*Jarrett, J. W., Zhao, T., Biswas, S., Liu, X., & Knappenberger, K. L., Jr. (presented 2015, January) *Applications of Nonlinear Optical Localization Using Electromagnetic Surface Fields (NOLES) Imaging*. Poster presentation at 18<sup>th</sup> Annual Southeast Ultrafast Conference (SEUFC) 2015, Florida State University. (Regional)
  
- \*Yi, C., & Knappenberger, K. L., Jr. (presented 2015, January) *Ligand- and Solvent-Dependent Relaxation Dynamics in Superatomic Nanoclusters*. Poster presentation at 18<sup>th</sup> Annual Southeast Ultrafast Conference (SEUFC) 2015, Florida State University. (Regional)
  
- \*Green, T. D., & Knappenberger, K. L., Jr. (presented 2014, January). *Temperature- and Field-Dependent Photoluminescence of Gold Nanoclusters*. Poster presentation at 17th Annual Southeast Ultrafast Conference, Louisiana State University. (Regional)
  
- \*Jarrett, J. W., & Knappenberger, K. L., Jr. (presented 2014, January). *Studying Nanoparticle Transducers with Nonlinear Optical Localization Using Electromagnetic Surface Fields (NOLES) Imaging*. Poster presentation at 17th Annual Southeast Ultrafast Conference (SEUF), Louisiana State University, Baton Rouge, LA. (Regional)
  
- \*Williams, L. J., & Knappenberger, K. L., Jr. (presented 2014, January). *Plasmonic Nanoparticle Networks Formed Using Iron Porphyrin Bridges*. Poster presentation at 17th Southeast Ultrafast Conference, Louisiana State University. (Regional)

- \*Knappenberger, K. L., Jr., & Yi, C. (presented 2013, July). *Superatom Photochemistry: New Insights into the Unusual Behavior of Unique Nanomaterials*. Poster presentation at Photochemistry Gordon Research Conference, Gordon Research Conferences, Smithfield College, Easton, MA, USA. (International)
- \*Jarrett, J. W., & Knappenberger, K. L., Jr. (presented 2013, May). *Plasmonic Nanoparticles Studied by Single-Particle Spectroscopy*. Presentation at Florida Annual Meeting and Exposition (FAME), American Chemical Society, Florida Section, Tampa, FL. (State)
- \*Yi, C., & Knappenberger, K. L., Jr. (presented 2013, May). *Ultrafast Electron Dynamics of Ligand-Protected Metal Nanoclusters*. Presentation at Florida Annual Meeting and Exposition (FAME), American Chemical Society, Florida Section, Tampa, FL. (State)
- \*Green, T. D., & Knappenberger, K. L., Jr. (presented 2012, November). *Temperature and Magnetic Field-Dependent Photoluminescence from Metal Nanoclusters*. Presentation at the meeting of Southeastern Society of the American Physical Society, Tallahassee, FL. (Regional)
- \*Jarrett, J. W., Chandra, M., & Knappenberger, K. L., Jr. (presented 2012, November). *Magnetic dipolar interactions in nanoparticle assemblies*. Presentation at the meeting of Southeastern Society of the American Physical Society, Tallahassee, FL. (Regional)
- \*Knappenberger, K. L., Jr., Chandra, M., Dowgiallo, A. M., & Green, T. D. (presented 2012, June). *Dynamics and Spectroscopy of Gold Nanostructures*. Poster presentation at Noble Metal Gordon Research Conference, Gordon Research Conferences, Mount Holyoke College, South Hadley, MA. (International)
- \*Green, T. D., & Knappenberger, K. L., Jr. (presented 2012, January). *Dynamics of Atomically Precise Nanoclusters Studied by Femtosecond Transient Absorption Spectroscopy*. Poster presentation at Southeast Ultrafast Conference 2012, University of Central Florida, Orlando, FL. (Regional)
- \*Lowman, C. A., & Knappenberger, K. L., Jr. (presented 2012, January). *Nanoscale Dynamics Studied by Magneto-optical Spectroscopy*. Presentation at Southeast Ultrafast Conference 2012, University of Central Florida, Orlando, FL. (Regional)
- \*Knappenberger, K. L., Jr. (presented 2011, July). *Structure-specific Nanoscale Dynamics*. Presentation at Gordon Research Conference, Clusters, Nanocrystals, and Nanostructures, Gordon Research Conferences, Mount Holyoke, South Hadley, MA. (International)
- \*Attar, A. R., & Knappenberger, K. L., Jr. (presented 2010, August). *Semiconductor-to-ligand Charge Transfer Studied by Femtosecond Transient Spectroscopy*. Poster presentation at Gordon Research Conference on Energy and Electron Transfer, Gordon Research Conferences, Salva Regina College, RI. (International)

\*Blumling, D. E., & Knappenberger, K. L., Jr. (presented 2010, January). *Magneto-optical Spectroscopy of Semiconducting Nanostructures*. Poster presentation at Inter-American Photochemical Society 20th Winter Conference, Inter-American Photochemical Society, St. Pete Beach, FL. (International)

\*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (presented 2010, January). *Interparticle Electromagnetic Coupling in Hollow Gold Nanoparticles*. Poster presentation at Inter-American Photochemical Society 20th Winter Conference, Inter-American Photochemical Society, St. Pete Beach, FL. (International)

\*Knappenberger, K. L., Jr. (presented 2009, January). *Femtosecond Dynamics of Plasmonic Nanoparticles*. Poster presentation at Inter-American Photochemical Society 19th Winter Conference, Inter-American Photochemical Society, St. Pete Beach, FL. (International)

Knappenberger, K. L., Jr. (presented 2006). *Coherent polyatomic dynamics studied by femtosecond time-resolved photoelectron spectroscopy: Dissociation of vibrationally excited CS<sub>2</sub> in the 6s and 4d Rydberg states*. Poster presentation at Gordon Research Conference on Atomic and Molecular Interactions, Gordon Research Conferences. (International)

Leskiw, B. D., Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (presented 2001). *Relaxation Dynamics of Vanadium-Carbon Clusters*. Poster presentation at Femtochemistry V, Femtochemistry, Toledo, Spain. (International)

### **Invited Workshops**

\*Knappenberger, K. L. (2011, December). *Complete-Structure Determination: New Advances and Opportunities for Nanoplasmonics*. Workshop delivered at Florida State University, Workshop on Three-Dimensional Electron Microscopy, Tallahassee, FL. (Local)

\*Knappenberger, K. L., Jr. (2010, January). *Femtosecond Time-resolved Spectroscopy of Nanostructures*. Workshop delivered at Ultrafast Systems LLC Workshop, Sarasota, FL. (International)

### **Invited Lectures and Readings of Original Work**

\*Knappenberger, K. L., Jr. (2014, November). *Single-structure Studies of Chiro-optical Nanomaterials*. Delivered at Michigan State University, East Lansing, MI. (National)

\*Knappenberger, K. L., Jr. (2014, November). *Structural Plasmonics Viewed at the Limits of Spatial Accuracy and Temporal Resolution*. Delivered at Western Michigan University, Kalamazoo, MI. (National)

- \*Knappenberger, K. L., Jr. (2013, November). *Spectroscopic Studies of Unique Nanoscale Confinement Effects*. Delivered at University of Alabama, Tuscaloosa, Alabama, USA. (National)
- \*Knappenberger, K. L. (2013, October). *Nanoparticle Transducers Studied Using Laser Spectroscopy*. Delivered at Florida Southern College, Florida Southern College, Lakeland, FL. (State)
- \*Knappenberger, K. L., Jr. (2013, October). *Bridging the Gap Between Superatomic and Plasmonic Metal Nanomaterials*. Delivered at University of New Mexico, University of New Mexico, Albuquerque, New Mexico. (National)
- \*Knappenberger, K. L., Jr. (2013, June). *Nanocluster Photochemistry: New Insights into the Unusual Behavior of Unique Nanomaterials*. Delivered at University of Warwick, Coventry, England, United Kingdom. (International)
- \*Knappenberger, K. L., Jr. (2013, June). *Nonlinear Optical Properties of Plasmonic Nanoantennas Studied Using Single-Particle Spectroscopy*. Delivered at Heriot-Watt University, Edinburgh, Scotland, United Kingdom. (International)
- \*Knappenberger, K. L., Jr. (2013, June). *Optical Properties and Dynamics of Nanoparticle Transducers*. Delivered at Durham University, Durham City, England, United Kingdom. (International)
- \*Knappenberger, K. L., Jr. (2013, May). *Plasmonic Nanoparticle Transducers Studied Using Single-Particle Spectroscopy*. Delivered at University of Pennsylvania, Philadelphia, PA. (National)
- \*Knappenberger, K. L., Jr. (2013, April). *Electron Dynamics and Optical Properties of Metal Nanostructures*. Delivered at Pennsylvania State University, University Park, PA. (National)
- \*Knappenberger, K. L., Jr. (2013, April). *Optical Plasmonic Nanoparticle Transducers Studied Using Single-Particle Spectroscopy*. Delivered at Carnegie Mellon University, Pittsburgh, PA. (National)
- \*Knappenberger, K. L., Jr. (2013, April). *Optical Properties and Dynamics of Nanoparticle Transducers*. Delivered at Case Western Reserve University, Cleveland, OH. (National)
- \*Knappenberger, K. L., Jr. (2013, March). *Optical Properties and Dynamics of Nanoparticle Transducers*. Delivered at University of North Carolina, Chapel Hill, NC. (National)

- \*Knappenberger, K. L., Jr. (2013, January). *Nanoparticle Optical Properties and Relaxation Dynamics Studied by Single-Particle Spectroscopy*. Delivered at 2012-I-APS Young Investigator Award Lecture, 22nd Winter Inter-American Photochemical Society Meeting, Sarasota, FL. (International)
- \*Knappenberger, K. L., Jr. (2013, January). *Spectroscopy and Dynamics of Nanomaterials*. Delivered at Florida State University, Tallahassee, FL. (National)
- \*Knappenberger, K. L., Jr. (2012, November). *Nanoparticle Plasmonics Studied by Nonlinear Optical Spectroscopy*. Delivered at Kansas State University, Manhattan, KS. (National)
- \*Knappenberger, K. L., Jr. (2012, November). *Relaxation Dynamics of Quantum-confined Metal Nanoclusters*. Delivered at Purdue University, West Lafayette, IN. (National)
- \*Knappenberger, K. L., Jr. (2012, November). *Structure-dependent Nanoparticle Plasmonics*. Delivered at Vanderbilt University, Nashville, TN. (National)
- \*Knappenberger, K. L., Jr. (2012, November). *Structure-dependent Optical Properties of Metal Nanostructures*. Delivered at University of Notre Dame, South Bend, IN. (National)
- \*Knappenberger, K. L., Jr. (2012, October). *Excited State Dynamics and Optical Properties of Nanoparticle Networks*. Delivered at Cornell University, Ithaca, NY. (National)
- \*Knappenberger, K. L., Jr. (2012, September). *Structure-dependent Nanoscale Dynamics and Spectroscopy*. Delivered at Trinity University, San Antonio, TX. (National)
- \*Knappenberger, K. L., Jr. (2012, August). *Structure-dependent Nanoscale Dynamics and Spectroscopy*. Delivered at Ohio University, Athens, OH. (National)
- \*Knappenberger, K. L., Jr. (2012, May). *Nanoscale Dynamics and Spectroscopy in Extreme Environments*. Delivered at Air Force Office of Scientific Research, Molecular Dynamics Contractor's Program Review, Arlington, VA. (National)
- \*Knappenberger, K. L., Jr. (2012, February). *Nanoscale Dynamics and Spectroscopy in Extreme Environments*. Delivered at Rice University, Department of Chemistry, Houston, TX. (National)
- \*Knappenberger, K. L., Jr. (2012, January). *Recent Advances in Single-Molecule Spectroscopy*. Delivered at Florida State University, Institute for Molecular Biophysics, Tallahassee, FL. (Local)
- \*Knappenberger, K. L., Jr. (2011, November). *Nanoscale Dynamics*. Delivered at University of North Florida, Jacksonville, FL. (State)

- \*Knappenberger, K. L., Jr. (2011, October). *Nanoscale Dynamics in Extreme Environments*. Delivered at Department of Chemistry, Lehigh University, Bethlehem, PA. (National)
- \*Knappenberger, K. L., Jr. (2011, October). *New Tools for Probing the Nanoparticle Structure-Function Interplay*. Delivered at Department of Chemical Engineering, Florida A&M University, Tallahassee, FL. (State)
- \*Knappenberger, K. L., Jr. (2011, September). *New Insights Into Exciton Dynamics*. Delivered at Department of Physics, University of Georgia, Athens, GA. (National)
- \*Knappenberger, K. L., Jr. (2011, September). *Recent Advances in Structure-Specific Nano-Optics*. Delivered at Department of Chemistry, University of Georgia, Athens, GA. (National)
- \*Knappenberger, K. L., Jr. (2011, May). *Spin-polarized Nanoscale Dynamics*. Delivered at Air Force Office of Scientific Research Molecular Dynamics Program Meeting, Pasadena, CA. (National)
- \*Knappenberger, K. L., Jr. (2011, May). *Structure-specific Nanoscale Dynamics*. Delivered at Sandia National Laboratory, Livermore, CA. (National)
- \*Knappenberger, K. L., Jr. (2011, May). *Structure-specific Nanoscale Dynamics*. Delivered at University of California, Santa Cruz, CA. (National)
- \*Knappenberger, K. L., Jr. (2011, May). *Structure-specific Nanoscale Dynamics*. Delivered at Lawrence Berkeley National Laboratory, Berkeley, CA. (National)
- \*Knappenberger, K. L., Jr. (2010, December). *Structure-specific Nanoscale Photodynamics*. Delivered at University of Florida, Gainesville, FL. (State)
- \*Dowgiallo, A. M., & Knappenberger, K. L., Jr. (2010, November). *Spectroscopy of Tailored Nanostructures*. Delivered at Towson State University, Towson, MD. (National)
- \*Knappenberger, K. L., Jr. (2010, May). *Nanoscale Photodynamics Studied by Time-resolved and Magneto-optical Spectroscopy*. Delivered at Air Force Office of Scientific Research Molecular Dynamics Program Meeting, Alexandria, VA. (National)
- \*Knappenberger, K. L., Jr. (2009, December). *Surface Plasmon Probing of Electronic Energy Relaxation in Metal Nanoparticles*. Delivered at Duke University, Durham, NC. (National)
- \*Knappenberger, K. L., Jr. (2009, October). *Magnetoplasmonic Nanostructures: A Route to Predictive Energy Conversion*. Delivered at Naval Energy Forum 2009, Tysons Corner, VA. (National)
- \*Knappenberger, K. L., Jr. (2009, September). *Achieving Electronic Coupling Enhancement with Tunable Plasmon-Supporting Hollow Gold Nanoparticles: Insights from Femtosecond*



*Transient Absorption and FDTD simulations.* Delivered at NanoFlorida 2009, University of Central Florida, Orlando, FL. (State)

\*Knappenberger, K. L., Jr. (2009, March). *Electronic Relaxation in Isolated and Aggregated Hollow Gold Nanoparticles.* Delivered at American Physical Society Meeting, Pittsburgh, PA. (National)

Knappenberger, K. L., Jr. (2008, January). *Coherent Molecular and Nanoscale Dynamics.* Delivered at Department of Chemistry, University of Georgia, Athens, GA. (National)

Knappenberger, K. L., Jr. (2008, January). *Coherent Molecular and Nanoscale Dynamics.* Delivered at Department of Chemistry, Florida State University, Tallahassee, FL. (National)

Knappenberger, K. L., Jr. (2008, January). *Coherent Molecular and Nanoscale Dynamics.* Delivered at Department of Chemistry, University of Arkansas, Fayetteville, AR. (National)

Knappenberger, K. L., Jr. (2007, December). *Coherent Molecular and Nanoscale Dynamics.* Delivered at Department of Chemistry, Texas A&M University, College Station, TX. (National)

Knappenberger, K. L., Jr. (2007, December). *Coherent Molecular and Nanoscale Dynamics.* Delivered at Department of Chemistry, University of Maryland, Baltimore, MD. (National)

Knappenberger, K. L., Jr. (2007, December). *Coherent Molecular and Nanoscale Dynamics.* Delivered at Department of Chemistry, Emory University, Atlanta, GA. (National)

Knappenberger, K. L., Jr. (2007, April). *Single-Nanoparticle Photophysics.* Delivered at Department of Chemistry, University of California, Santa Cruz, Santa Cruz, CA. (National)

Knappenberger, K. L., Jr. (2007, January). *Imaging coherent molecular and nanoscale dynamics.* Delivered at Lawrence Berkeley National Laboratory, Chemical Sciences Division, Berkeley, CA. (Local)

Knappenberger, K. L., Jr. (2005, March). *Photodetachment and Photoionization Probes of Cluster Dynamics.* Delivered at University of Colorado, Boulder, Boulder, CO. (National)

Knappenberger, K. L., Jr. (2005, February). *Photodetachment and Photoionization Probes of Cluster Dynamics.* Delivered at University of California, Berkeley, Berkeley, CA. (National)

Knappenberger, K. L., Jr., & Castleman, A. W., Jr. (2003). *Photodissociation of Heterogeneous Clusters*. Delivered at The Pennsylvania State Graduate Research Exhibition, Pennsylvania State University. (Local)

Knappenberger, K. L., Jr., & Rodgers, M. A. J. (1999). *Steric Hindrance and its influence on the Excited State Dynamics of Silicon Phthalocyanines*. Delivered at Hope College, Holland, MI. (Regional)

## **Contracts and Grants**

### **Contracts and Grants Funded**

Knappenberger, K. L., Jr. (April 2015- Mar 2018). Foundations of Energy Transfer in Molecular Plasmonics. Selected for funding by Air Force Office of Scientific Research. Total Award \$525,000.

Knappenberger, K. L., Jr. (Mar 2012–Mar 2017). *CAREER: Structure-Specific Nanoscale Dynamics Studied by Nonlinear and Magneto-optical Spectroscopy*. Funded by National Science Foundation. (1150249). Total award \$600,000.

Knappenberger, K. L., Jr. (Sep 2011–Aug 2013). *Fundamental Antenna-Receiver Interactions In Metal-Based Light-Harvesting Nanostructures Studied by Magneto-Optical Spectroscopy*. Funded by American Chemical Society Petroleum Research Fund. (51233-DN16). Total award \$100,000.

Knappenberger, K. L., Jr. (Jun 2010–Jun 2013). *Magnetoplasmonic Nanostructures: A Route to Predictive Light Harvesting, Photocatalytic and Ferrofluidic Materials*. Funded by Air Force Office of Scientific Research. (FA9550-10-1-0300). Total award \$355,090.

Knappenberger, K. L., Jr. (2009–2010). *Cryogenic Scanning Microscope for in-situ Spectroscopy and Imaging*. Funded by FSU-CRC EIEG. Total award \$47,104.

## **Service**

### **Florida State University**

#### **FSU Department Service**

Chair, Capital Resource and Space (2014–present).

Member, Promotion and Tenure (2014–present).

Mentor to Eugene DePrince III (Assistant Professor), Faculty Mentoring (2013–present).

Member, Faculty Search Committee (2011–present).

Member, Faculty Additions Committee, Department of Chemistry (2011–present).

Member, Departmental Colloquium Committee, Department of Chemistry (2010–present).

Member, Graduate Recruiting and Admissions Committee, Department of Chemistry (2010–present).

Organizer, Physical Chemistry Seminar Series (2008–present).

Member, Materials Characterization Lab Committee, Department of Chemistry (2009–2012).

Member, Departmental Webpage Committee, Department of Chemistry (2009–2010).

Member, Capital Resource and Space Committee, Department of Chemistry (2008–2009).

### **FSU Institute or Center Service**

Member, Integrative Nanoscience Institute (2011–present).

Organizer, Kroto Lecture in Chemical Physics (2011–present).

Member, Chemical Physics Program (2008–present).

## **The Profession**

### **Editor for Refereed Journals**

Associate Editor, *Journal of Nanoscience Letters* (2014–present).

### **Guest Editing for Refereed Journals**

Knappenberger, K. L., Jr. (Ed.). (2014). A. W. Castleman, Jr. Festschrift [Special Issue]. *Journal of Physical Chemistry A*.

Knappenberger, K. L., Jr. (Ed.). (2011). [Special Issue]. *Journal of Nanomaterials*.

**Guest Reviewer for Refereed Journals**

*Scientific Reports* (2014–present).

*Journal of Nanoparticle Research* (2013–present).

*Nature* (2013–present).

*Opto-Electronics Review* (2013–present).

*Chemical Science* (2012–present).

*Langmuir* (2012–present).

*Materials Research Bulletin* (2012–present).

*The Journal of the American Chemical Society* (2012–present).

*Nano Letters* (2011–present).

*Nanoscale* (2011–present).

*The Journal of Physical Chemistry Letters* (2011–present).

*ACS Nano* (2010–present).

*Review of Scientific Instruments* (2010–present).

*The Journal of Physical Chemistry B* (2010–present).

*The Journal of Chemical Physics* (2009–present).

*The Journal of Physical Chemistry A* (2009–present).

*The Journal of Physical Chemistry C* (2008–present).

*Chemical Physics Letters* (2004–present).

**Chair of a Symposium**

Knappenberger, K. L., Jr. (Chair). (2015, January). *2015 Southeast Regional Ultrafast Conference*. Symposium conducted at the meeting of SEUFC, Tallahassee, FL.

Knappenberger, K. L., Jr. (Chair). (2014, July). *Magnetically Active Systems*. Symposium conducted at the meeting of Gordon Research Conference on Colloidal Semiconductor Nanocrystals, Bryant University, Smithfield, RI.

Knappenberger, K. L., Jr. (Chair). (2013, July). *Nonlinear Optical Spectroscopy and Imaging Session of Nonlinear Optics Conference*. Symposium conducted at the meeting of Optical Society of America, Kona, Hawaii.

Knappenberger, K. L., Jr. (Chair). (2012, November). *Spectroscopy and Applications of Nanoparticles*. Symposium conducted at the meeting of Southwest Regional Meeting of the American Chemical Society, Baton Rouge Louisiana.

Knappenberger, K. L., Jr. (Chair). (2009, March). *Spectroscopy and Dynamics of Nanoclusters and Single Molecules*. Symposium conducted at the meeting of American Physical Society, Pittsburgh, PA.

### **Reviewer or Panelist for Grant Applications**

Defense Advanced Research Projects Agency (DARPA) (2014–present).

National Science Foundation (2014–present).

Brookhaven National Lab-Center for Functional Nanomaterials (2013–present).

Lawrence Berkeley National Lab - Molecular Foundry (2012–present).

### **Service to Professional Associations**

Discussion Leader, Gordon Research Conference: Semiconducting Nanoparticles (2014–present).

Referee, Department of Energy (2013–present).

Referee, Keck Foundation (2012–present).

Referee, National Science Foundation (2012–present).

Referee, American Chemical Society (2011–present).

Invited Session Chair, Nonlinear Optics 2013, session on Nonlinear Optical Imaging and Spectroscopy (International Conference), Optical Society of America (2013).

Symposium Organizer, I organized a two-day symposium focusing on spectroscopy and applications of nanoparticles during the 2012 Southwest Regional Meeting of the American Chemical Society, American Chemical Society (2012).

Invited Poster Judge, Florida Division of the American Vacuum Society (2012).

Invited Guest Editor, Journal of Nanomaterials (2011).

Invited Session Chair, March Meeting "Spectroscopy and Dynamics of Nanoclusters and Single Molecules", American Physical Society (2009).

Invited Poster Judge, NanoFlorida (2009).

### **Service to Other Universities**

External Ph.D. Thesis Reviewer, *Politecnico di Milano* (2014–present).

External Ph.D. Thesis Reviewer, *Indian Institute of Science, Bangalore* (2012–present).

### **The Community**

Organizer, Physical Chemistry seminar series (2008–present).

Mentor, Scientific demonstrations for students (Spring), Buck Lake Elementary (2011).

Mentor, Scientific demonstrations and Try-it programs (Fall), Girl Scouts Council of the Florida Panhandle (2010).

Mentor, For local students presented by the FSU Physics Department (along with Oliver Steinbock during Fall 2009 and 2010), Saturday Morning Physics (2009–2010).

### **Consultation**

Strategic Analysis. (2014–present).

Ultrafast Systems, LLC. (2010–present).