



# NSF-REU: Sunshine Institute for the Interaction of Light with Matter

(updated August 6, 2023)



**Ed Hilinski and Bridget DePrince, Directors**

<https://www.chem.fsu.edu/reu/>

***Department of Chemistry and Biochemistry***

***Florida State University***

***Tallahassee, Florida 32306-4390***





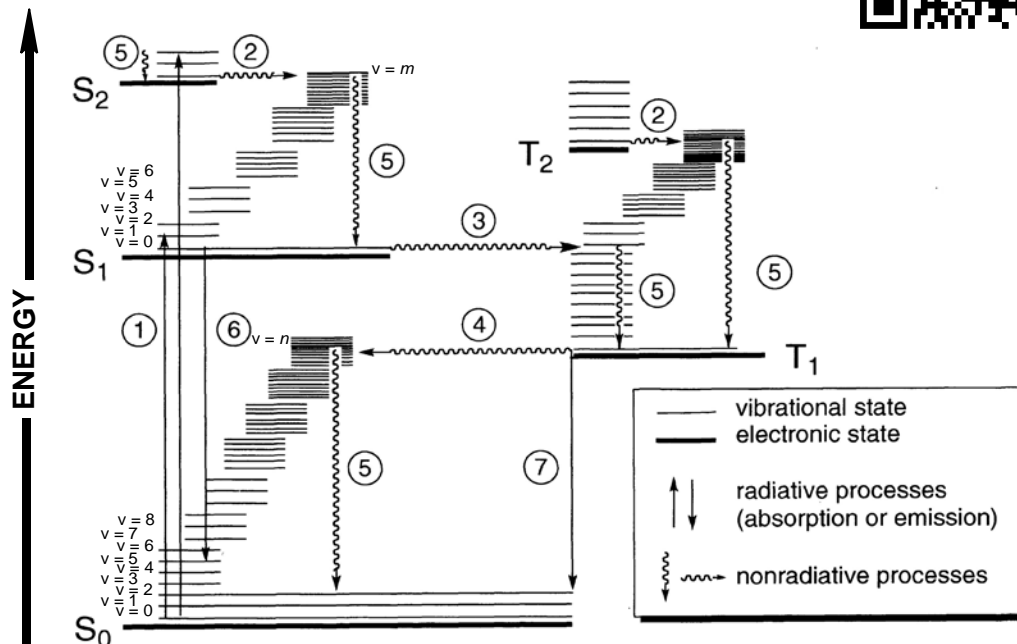
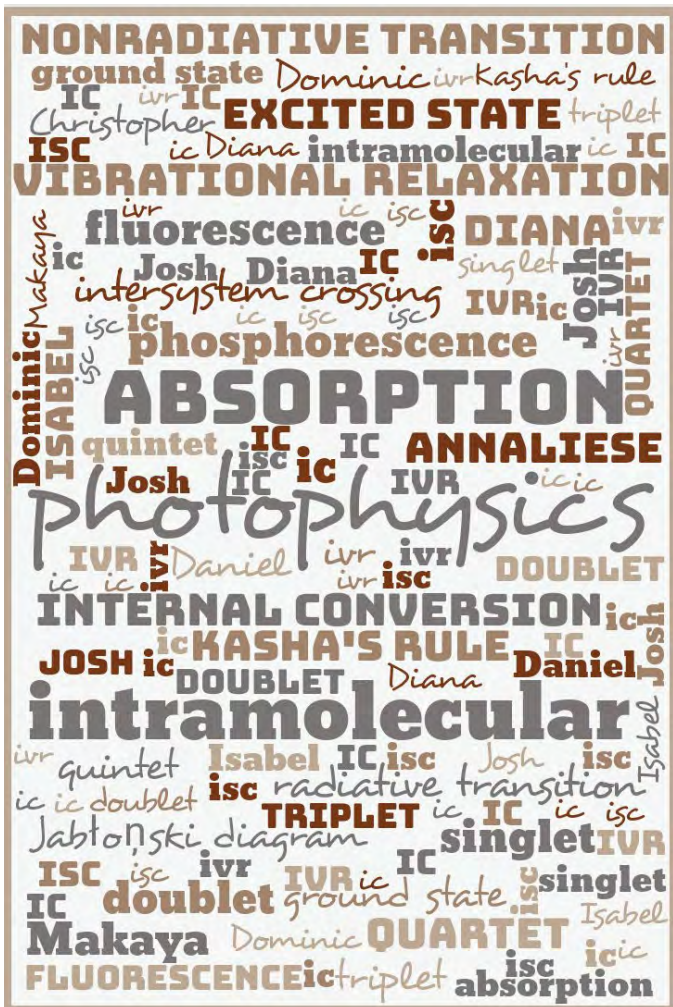
# NSF-REU: Sunshine Institute for the Interaction of Light with Matter



Summer 2023 - May 30 to Aug 4  
Ed Hilinski and Bridget DePrince, Directors

<https://www.chem.fsu.edu/reu/>

Department of Chemistry and Biochemistry  
Florida State University  
Tallahassee, Florida 32306-4390





# A Chronology

## First Day - May 30, 2023

# Welcome!

REU Participant	Home Institution	In-Lab Mentor	Faculty Advisor
Joshua Birke	Southeast Missouri State U.	Colette Sullivan & Rachel Weiss Clark	Lea Nienhaus
Christopher Cornejo	Elmhurst University	Brandon Nusser	Lei Zhu
Annaliese Franklin	Bridgewater College	Tunde Shonde & Oluwadara Olasupo	Biwu Ma
Daniel Larsen	Ithaca College	Zana Zana Singleton	Justin Kennemur
Diana K. Nazario Torres	Pontifical Catholic U., Puerto Rico	Shubham Bisht & Dibya Mondal	Michael Shatruk
Makaya Robinson	Saint Mary's College	Nikolas Dos Santos & Antony Sekar Kulandai Raj	Igor Alabugin
Isabel Sedwick	Loyola University Maryland	Sumesh Babu Krishnan	Jack Saltiel
Dominic Willadsen	Concordia U. Wisconsin	Erica Knorr	Kenneth Hanson



## First Week Agenda

*Tuesday, May 30, 2023*

- |                  |  |
|------------------|--|
| 8:00-8:30 a.m.   | Walk to DLC from McCollum Hall – Dr. Bridget DePrince                  |
| 8:30-9:20 a.m.   | Breakfast / Mingling – DLC 123   |
|                  | Introduction to the Department – DLC 123                               |
|                  | Dept. Chair Geoff Strouse & Dr. Ed Hilinski                            |
| 9:20-10:00 a.m.  | Ice Breaker: Participants and Faculty Advisors Introductions           |
| 10:00-11:00 a.m. | Meet the In-Lab Mentors – Lab Tours                                    |
| 11:00-12:00 noon | Departmental Paperwork & HR  |
| 12:00-1:00 p.m.  | Group Lunch – Kearney Osceola Grille                                   |
|                  | REU Participants, Drs. Jack Saltiel,<br>Bridget DePrince & Ed Hilinski |
| 1:30-2:30 p.m.   | Safety Training – DLC 123  |
|                  | Ben Arline, Environ. Health & Safety                                   |
| 2:30-4:00 p.m.   | Departmental Paperwork & FSU ID – DLC 123 & FSU Card Center            |
|                  | Dr. Ed Hilinski  |



## **First Week Agenda** *(continued)*

*Wednesday, May 31, 2023*

-3:30 p.m.

Work in the Research Labs

3:30-4:30 p.m.

Departmental Ice Cream Social - CSL Lobby

*Thursday, June 1, 2023*

Work in the Research Labs

*Friday, June 2, 2023*

-3:30 p.m.

Work in the Research Labs

3:30-5:00 p.m.

REU Weekly Seminar – DLC 123 – Dr. Ed Hilinski  
Entry Surveys, Baseline Quiz, summary of the first week  
Research ethics, lab culture, lab notebooks,  
expectations  
Research resources, tutorials, learning beyond lab,  
Scifinder Scholar, NMR training, ChemDraw,  
other software

*Saturday, June 3, 2023*

12:00 p.m.

River Boat Ride, Swimming, and Dining – Wakulla Springs, FL  
Dr. Ed Hilinski



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*Department of Chemistry and Biochemistry, Florida State University*



## Weeks 2 - 10

	Date	Activity	Location, time
Week 2	T June 6	Photochemistry Café - Dr. Biwu Ma - w/breakfast	DLC 123, 9:00 a.m.
	R June 8	Tour of the Maglab at 10:00 a.m.	Tallahassee, FL
	F June 9	Photochemistry Café - Dr. Jack Saltiel REU Seminar - Ed Hilinski - discussion of research presentations	DLC 123, 3:30 p.m.
	Sa June 10	Coffee & Conversations - Dr. Ed Hilinski	11:00 a.m.
Week 3	T June 13	Photochemistry Café - Dr. Kenneth Hanson - w/breakfast - Graduate School Demystified	DLC 123, 9:00 a.m.
	F June 16	REU Seminar (discussion of student research themes)	DLC 123, 3:30 p.m.
Week 4	T June 20	Photochemistry Café - Dr. Igor Alabugin - w/breakfast	DLC 123, 9:00 a.m.
	R June 22	Tour of Nammo Perry Inc (depart at 7:30 am for tour at 9 am)	Perry, FL
	F June 23	REU Seminar (3-min student presentations: research themes)	DLC 123 3:30 p.m.
Week 5	T June 27	Photochemistry Café - Dr. Lea Nienhaus - w/breakfast	DLC 123 9:00 a.m.
	F June 30	REU Seminar (student presentations: research themes)	DLC 123 3:30 p.m.
	Sa July 1	Coffee & Conversations - Dr. Ed Hilinski	10:00 a.m.
Week 6	T July 4	Independence Day picnic	DePrince Residence
	F July 7	Photochemistry Café - Dr. Justin Kennemur REU Seminar - Dr. Ed Hilinski - weekly review and update	DLC 123, 3:30 p.m. DLC 123 3:30 p.m.
		First Friday Festivities	6:30 p.m.
Week 7	T July 11	Photochemistry Café - Dr. Mike Shatruck - w/breakfast	DLC 123 9:00 a.m.
	R July 13	Tyndall Air Force Base (depart 7:40 am EDT for a 10:00 am CDT tour)	Tyndall, FL
	F July 14	REU Seminar - Dr. Ed Hilinski - weekly review and update	DLC 123 3:30 p.m.



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Department of Chemistry and Biochemistry, Florida State University



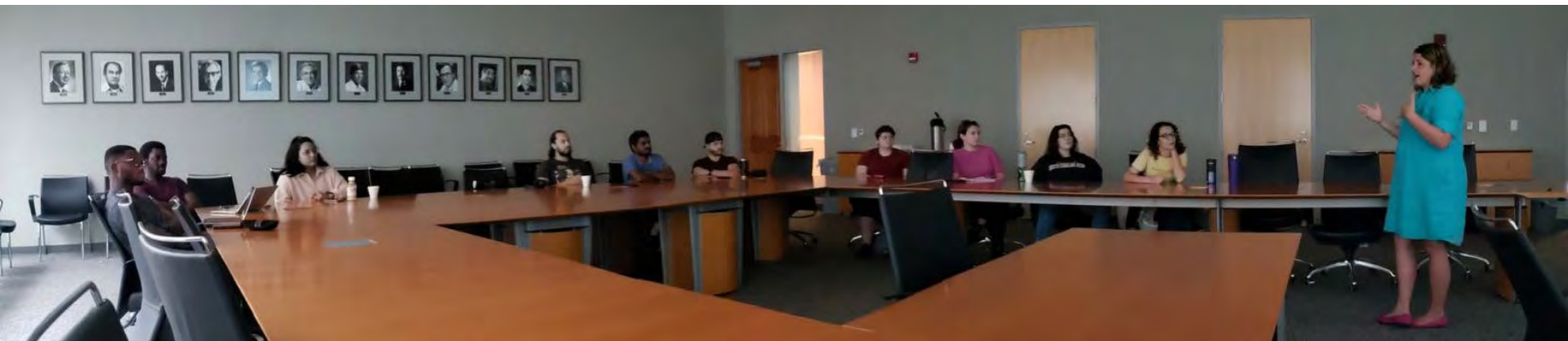
## Weeks 2 - 10 (continued)

	Date	Activity	Location, time
Week 8	T July 18	Photochemistry Café - Dr. Kenneth Hanson - w/breakfast	DLC 123 9:00 a.m.
	F July 21	REU seminar (student 15-min research presentations) 1. Daniel Larsen 2. Annaliese Franklin	DLC 123, 3:30 p.m.
Week 9	M July 24	Dinner with REU Students, In-Lab Mentors & Faculty	Kool Beanz, 6:00 p.m.
	T July 25	Photochemistry Café - Dr. Lei Zhu - w/breakfast	DLC 123, 9:00 a.m.
	R July 27	REU seminar (student 15-min research presentations) 3. Christopher Cornejo 4. Dominic Willadsen 5. Makaya Robinson	DLC 123, 3:30 p.m.
	F July 28	REU seminar (student 15-min research presentations) 6. Isabel Sedwick 7. Diana Nazario Torres 8. Joshua Birke	DLC 123, 3:30 p.m.
	Sa July 29	Coffee & Conversations - Dr. Ed Hilinski	12:00 p.m.
Week 10	T Aug 1	Photochemistry Café - Dr. Ed Hilinski - w/breakfast	DLC 123, 9:00 a.m.
	R Aug 3	Poster Session (student research presentations)	CSL lobby, 3:00 p.m..
	F Aug 4	Exit interviews and surveys	DLC 5 <sup>th</sup> Floor Conf. Rm.
	F Aug 4	REU seminar	DLC 123, 3:30 p.m.
SaSu Aug 5-6 Coffee & Conversations, Meals & Student departures			



## **REU In-Lab Mentors Meeting**

**May 24, 2023 - Chemical Sciences Laboratory (CSL) Room 1005**  
**with Drs. Bridget DePrince and Ed Hilinski**



**left to right:** Oluwadara Olasupo; Tunde Shonde; Zana Zana Singleton  
Nikolas Dos Santos; Sumesh Babu Krishnan; Brandon Nusser;  
Erica Knorr; Rachel Weiss Clark; Colette Sullivan; Sarah Bennett;  
Bridget DePrince





## The REU Student Participants and Morning Beverages

May 29, 2023 - Black Dog Café, Tallahassee, Florida with Dr. Ed. Hilinski



clockwise from 8 o'clock: Isabel Sedwick; Diana K. Nazario Torres; Annaliese Franklin; Makaya Robinson; Dominic Willadsen; Daniel Larsen; Josh Birke; Christopher Cornejo



## The REU participants have some lunch

May 29, 2023 - Midtown Caboose, Tallahassee, Florida with Dr. Ed Hilinski



left to right: Dominic Willadsen; Christopher Cornejo; Daniel Larsen;  
Josh Birke; Makaya Robinson; Isabel Sedwick;  
Diana K. Nazario Torres; Annaliese Franklin



## ... and some dinner

May 29, 2023 - Mayuri Indian Restaurant, Tallahassee, Florida with Dr. Ed Hilinski



left to right: Annaliese Franklin; Isabel Sedwick; Dominic Willadsen; Josh Birke;  
Daniel Larsen; Christopher Cornejo; Makaya Robinson; Diana K. Nazario Torres



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## **Lunch – Kearney Osceola Grille at the Dunlap Champions Club**

<https://fsuchampionsclub.com/>

**May 30, 2023, 12:00 p.m.**

**225 Champions Way, Building B, Tallahassee, Florida**





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## Ice Cream Social

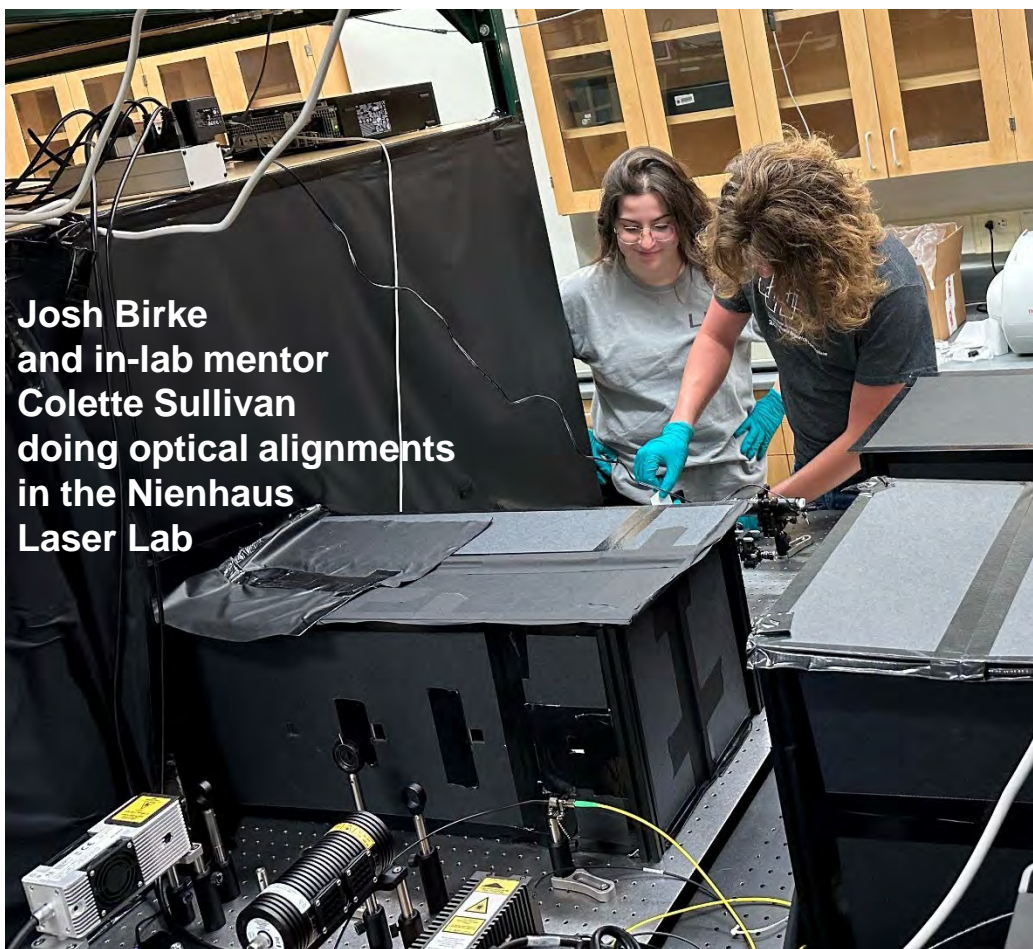
May 31, 2023 - CSL Lobby



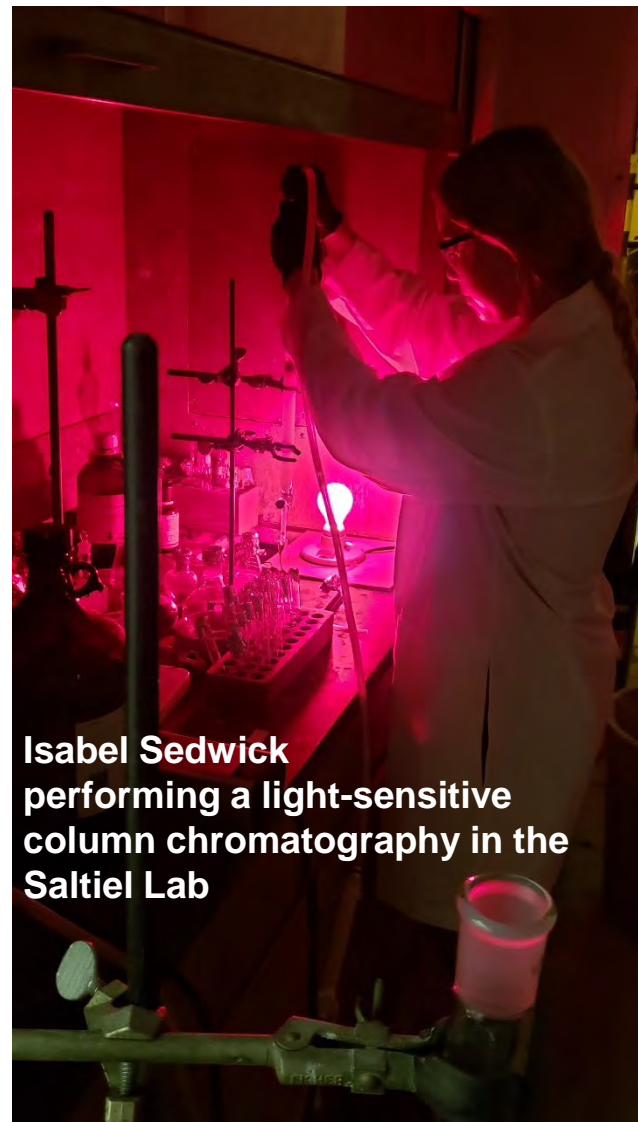


## Experiments Are Underway

June 1, 2023



**Josh Birke and in-lab mentor Colette Sullivan doing optical alignments in the Nienhaus Laser Lab**



**Isabel Sedwick performing a light-sensitive column chromatography in the Saltiel Lab**



## REU Weekly Seminar

June 2, 2023 - DLC 123, 3:30-5:00 p.m. with Dr. Ed Hilinski

Entry survey, entry quiz, summary of the first week  
Research ethics, lab culture, lab notebooks, expectations  
Research resources, tutorials, learning beyond lab,  
SciFinder Scholar, NMR training, ChemDraw, other software



**Clockwise from  
8 to 4 o'clock**

Josh Birke  
Daniel Larsen  
Annaliese Franklin  
Diana K. Nazario Torres  
Makaya Robinson  
Isabel Sedwick  
Dominic Willadsen  
Chris Cornejo



## Trip to Wakulla Springs

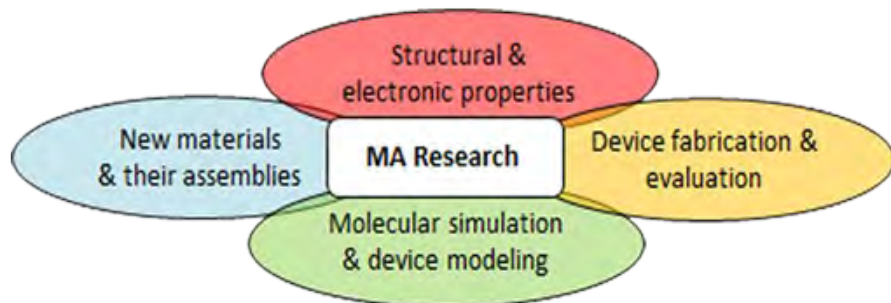
[www.floridastateparks.org/parks-and-trails/edward-ball-wakulla-springs-state-park](http://www.floridastateparks.org/parks-and-trails/edward-ball-wakulla-springs-state-park)

June 3, 2023

Wakulla, Florida  
with Ed Hilinski







## Photochemistry Café

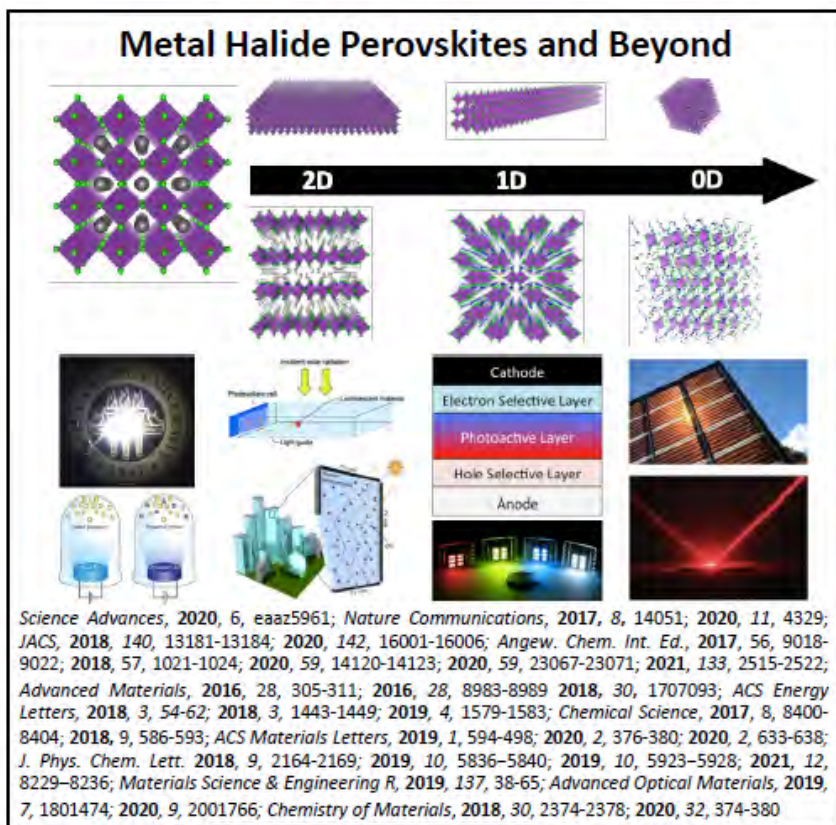
### “Low Dimensional Metal Halide Perovskites and Hybrids: From Synthetic Control to Device Integration”

<http://www.chem.fsu.edu/reu-links/>

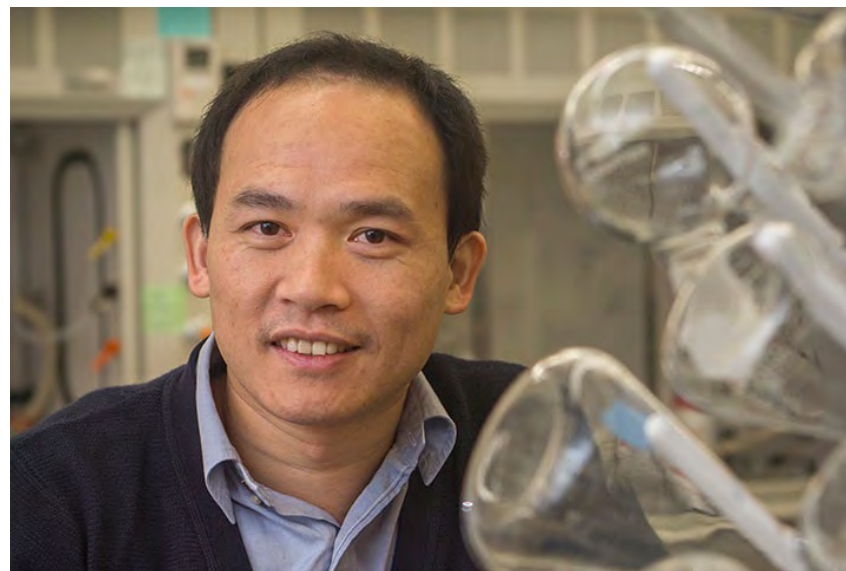
**Prof. Biwu Ma**

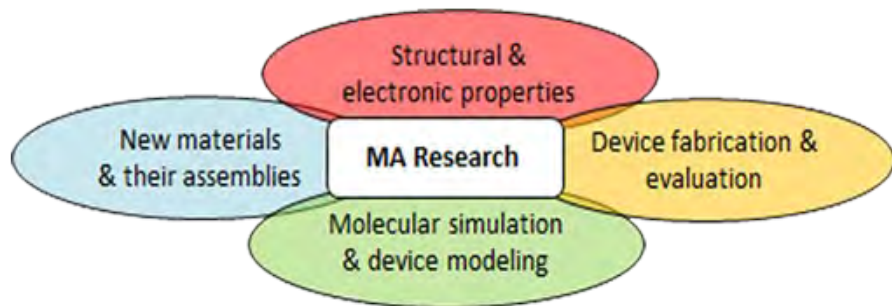
June 6, 2023, 9:00-10:00 a.m.  
 DLC 123, Tallahassee, Florida

**Metal Halide Perovskites and Beyond**



*Science Advances*, 2020, 6, eaaz5961; *Nature Communications*, 2017, 8, 14051; 2020, 11, 4329; *JACS*, 2018, 140, 13181-13184; 2020, 142, 16001-16006; *Angew. Chem. Int. Ed.*, 2017, 56, 9018-9022; 2018, 57, 1021-1024; 2020, 59, 14120-14123; 2020, 59, 23067-23071; 2021, 133, 2515-2522; *Advanced Materials*, 2016, 28, 305-311; 2016, 28, 8983-8989; 2018, 30, 1707093; *ACS Energy Letters*, 2018, 3, 54-62; 2018, 3, 1443-1449; 2019, 4, 1579-1583; *Chemical Science*, 2017, 8, 8400-8404; 2018, 9, 586-593; *ACS Materials Letters*, 2019, 1, 594-498; 2020, 2, 376-380; 2020, 2, 633-638; *J. Phys. Chem. Lett.* 2018, 9, 2164-2169; 2019, 10, 5836-5840; 2019, 10, 5923-5928; 2021, 12, 8229-8236; *Materials Science & Engineering R*, 2019, 137, 38-65; *Advanced Optical Materials*, 2019, 7, 1801474; 2020, 9, 2001766; *Chemistry of Materials*, 2018, 30, 2374-2378; 2020, 32, 374-380





[Click here to watch the video.](#)

## Photochemistry Café

### ***“Low Dimensional Metal Halide Perovskites and Hybrids: From Synthetic Control to Device Integration”***

<http://www.chem.fsu.edu/reu-links/>

**Prof. Biwu Ma**

June 6, 2023, 9:00-10:00 a.m.  
DLC 123, Tallahassee, Florida





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# Tour of the National High Magnetic Field Laboratory

[nationalmaglab.org/](http://nationalmaglab.org/)

June 8, 2023, 10:00-11:00 a.m. - Innovation Park, Tallahassee, Florida  
Depart from 1<sup>st</sup> Floor DLC Lobby at 9:30 a.m.





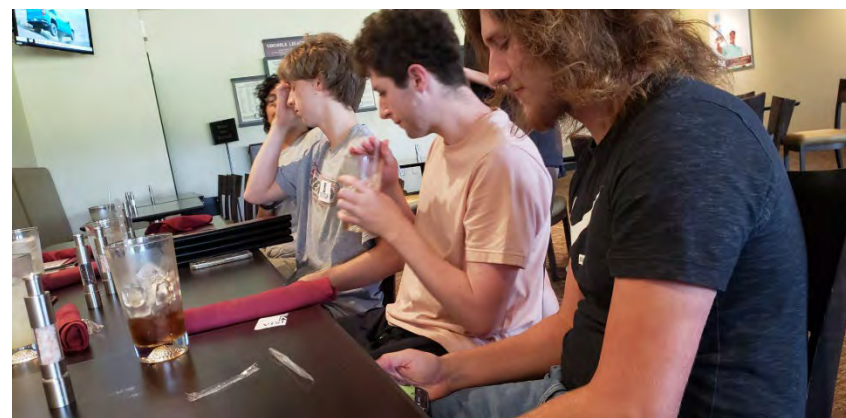
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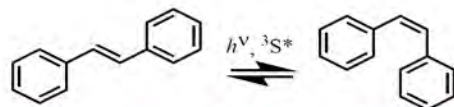
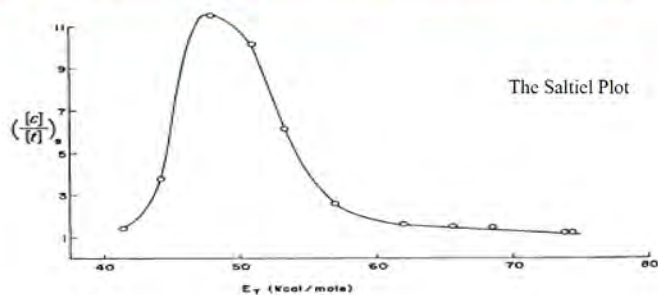
## Lunch – Renegade Grille at Seminole Legacy Golf Club

<https://www.seminolelegacygolfclub.com/>

June 8, 2023, 11:30 a.m. - 2550 Pottsdamer Street, Tallahassee, Florida



### Triplet Sensitized Stilbene Photoisomerization



Hammond, G. S.; Saltiel, J. *J. Am. Soc. Chem.* **1962-1964.**

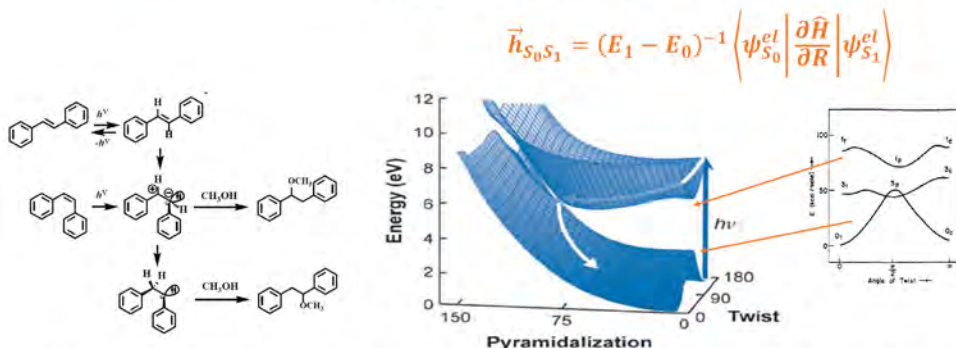
## Photochemistry Café “Elementary Photophysical Transitions and Photochemical Reactions”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Jack Saltiel**

June 9, 2023, 3:30-4:30 p.m.  
 DLC 123, Tallahassee, Florida

### Multidimensional Isomerization – Conical Intersections – Trapping Twisted Intermediates



Saltiel, J.; Gupta, S. Photochemistry of the Stilbenes in Methanol. Trapping the Common Phantom Singlet State. *J. Phys. Chem. A* **2018**, *122*, 6089-6099.

B. G. Levine, T. J. Martinez. *Annu. Rev. Phys. Chem.* **2007**, *58*, 613-34.





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**Photochemistry Café**  
**“Elementary Photophysical Transitions and Photochemical Reactions”**

<http://www.chem.fsu.edu/reu-links/>

**Prof. Jack Saltiel**

June 9, 2023, 3:30-4:30 p.m.  
DLC 123, Tallahassee, Florida





## REU Weekly Seminar

June 9, 2023 - DLC 123, 4:30 p.m. with Dr. Ed Hilinski

Survey about the first two weeks,  
Discussion about activities of the preceding week and research  
research resources - <https://guides.lib.fsu.edu/c.php?g=352310&p=2380486>  
tutorials, learning beyond lab - <http://www.chem.fsu.edu/reu-links/>

SciFinder Scholar – first time users need to register - <https://guides.lib.fsu.edu/c.php?g=352310&p=2380486>  
NMR training, ChemDraw and Chem3D, other software





## The REU participants have some morning beverages

June 10, 2023 - Black Dog Café, Tallahassee, Florida with Dr. Ed. Hilinski







## Photochemistry Café “Graduate School Demystified”

<http://www.chem.fsu.edu/reu-links/>

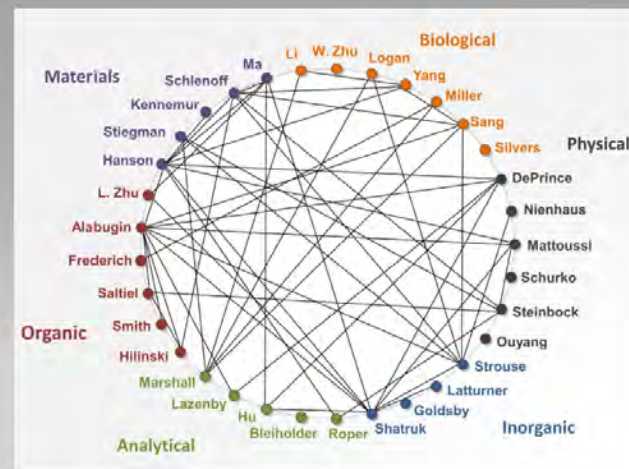
**Prof. Kenneth Hanson**

June 13, 2023, 9:00-10:00 a.m.  
 DLC 123, Tallahassee, Florida



### Where to Apply?

- Department Size
- Research Strengths
- Collegiality
- Social/Networking
- Success rates
- Graduate Student Union
- Collaborative vs. Competitive



### Ph.D at FSU: Timeline

4<sup>th</sup>-6<sup>th</sup> Year Thesis and Defense (average 5.2 years)

#### Thesis/Dissertation:

A compilation of your graduate research  
 Highlights a unique contribution to science  
 Typically, 100-300 pages



#### Defense:

Open, 50 min presentation  
 10 min. for ? from audience  
 30-60 min. ? from the committee





## **Photochemistry Café** **“Graduate School Demystified”**

<http://www.chem.fsu.edu/reu-links/>

**Prof. Kenneth Hanson**

June 13, 2023, 9:00-10:00 a.m.

DLC 123, Tallahassee, Florida





## REU Weekly Seminar

June 16, 2023 - DLC 123, 3:30 p.m. with Dr. Ed Hilinski

Discussion about activities of the preceding week and research

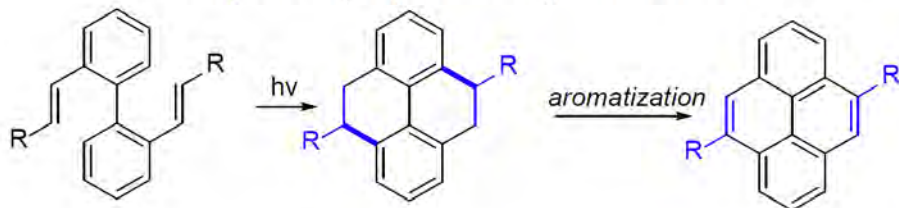
Discussion about comments given on the June 7 survey

Brief board talks about research:

Christopher Cornejo; Daniel Larsen; Isabel Sedwick; Makaya Robinson



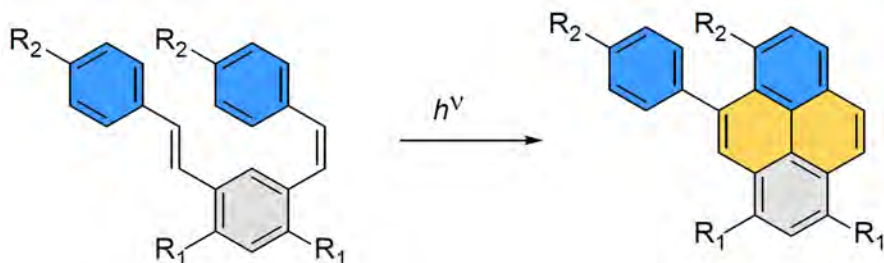
## Biphenyl photocyclization



Laarhoven et al., J. Chem. Soc., Perkin Trans. 1972, 2074



## Short *de novo* synthesis



## Photochemistry Café “De Novo Photochemical Synthesis of Non-Symmetric Pyrenes”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Igor Alabugin**

June 20, 2023, 9:00-10:00 a.m.  
DLC 123, Tallahassee, Florida



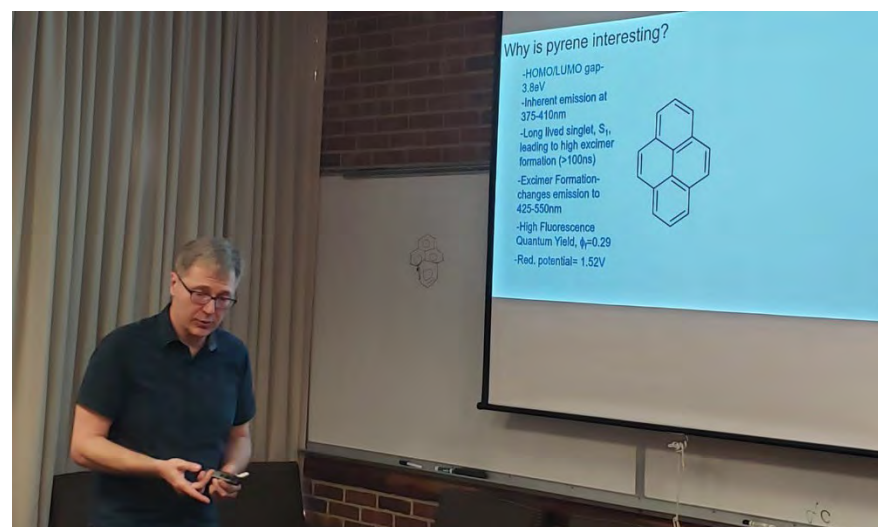


## Photochemistry Café “De Novo Photochemical Synthesis of Non-Symmetric Pyrenes”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Igor Alabugin**

June 20, 2023, 9:00-10:00 a.m.  
DLC 123, Tallahassee, Florida



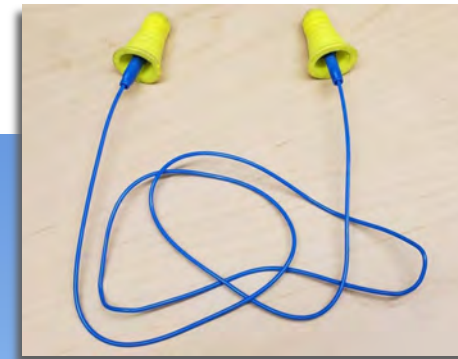


## Visit to Nammo Perry Inc

<https://www.nammo.com/location/perry/>

June 22, 2023 - Perry, Florida

(depart 7:30 a.m. EDT for 9:00 a.m. EDT tour)





# **REU Weekly Seminar**

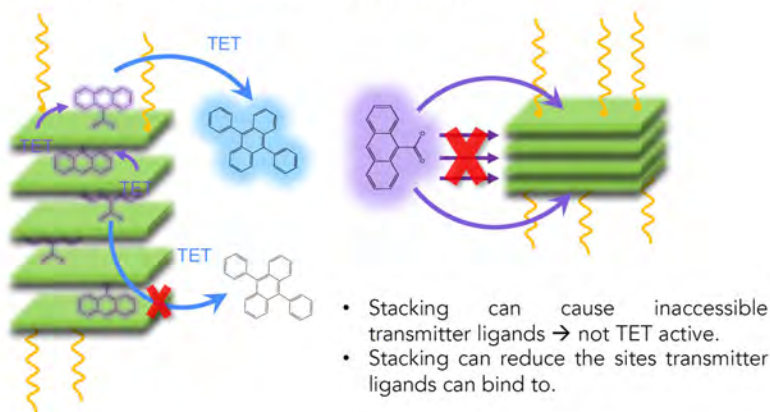
## **“3-Minute Student Presentations: Research Themes”**

**moderated by Ed Hilinski**  
**June 23, 2023 - DLC 123, 3:30-5:00 p.m.**





## Nanoplatelet Sensitizers



VanOrman, Z. A.; Bieber, A. S.; Wieghold, S.; Nienhaus, L. *Chem. Mater.* 2020, 32, 4734–4742.

## Photochemistry Café “Research in the Nienhaus Lab”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Lea Nienhaus**

June 27, 2023, 9:00-10:00 a.m.  
 DLC 123, Tallahassee, Florida

## Near-Infrared-to-Visible Upconversion

Converting infrared (low energy) light to visible (high energy) light via sensitized triplet-triplet annihilation.

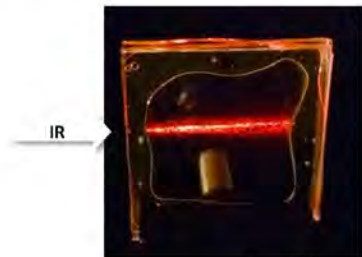
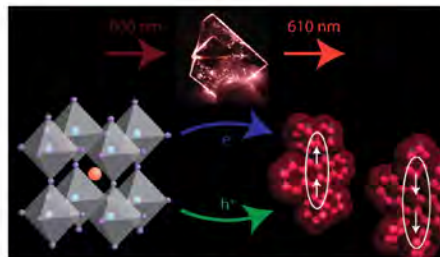


Photo: Dan Congreve

**QD-based upconversion**  
 Limited by poor exciton diffusion  
 Current benchmark: <1% absorption



Nienhaus, L., et al. *ACS Energy Lett.* 2019

**Perovskite-based upconversion**  
 Current benchmark: up to 60% absorption







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Department of Chemistry and Biochemistry, Florida State University



## Photochemistry Café “Research in the Nienhaus Lab”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Lea Nienhaus**

June 27, 2023, 9:00-10:00 a.m.  
DLC 123, Tallahassee, Florida





## REU Weekly Seminar

June 30, 2023 - DLC 123, 3:30 p.m. with Dr. Ed Hilinski

Discussion about activities of the preceding week and research





## The REU participants and beverages and some food

July 1, 2023 - The Power Plant Café, Cascades Park, Tallahassee, Florida with Dr. Ed Hilinski



<https://www.edisontally.com/cafe>





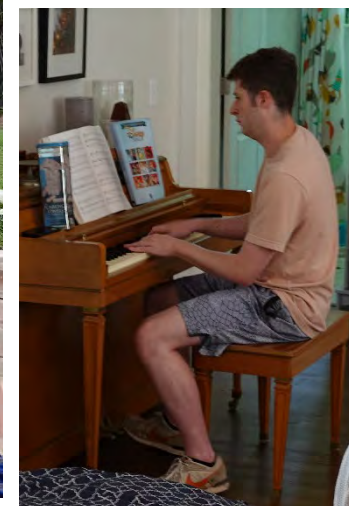
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Department of Chemistry and Biochemistry, Florida State University



## Independence Day Picnic

July 4, 2023  
The DePrince Residence

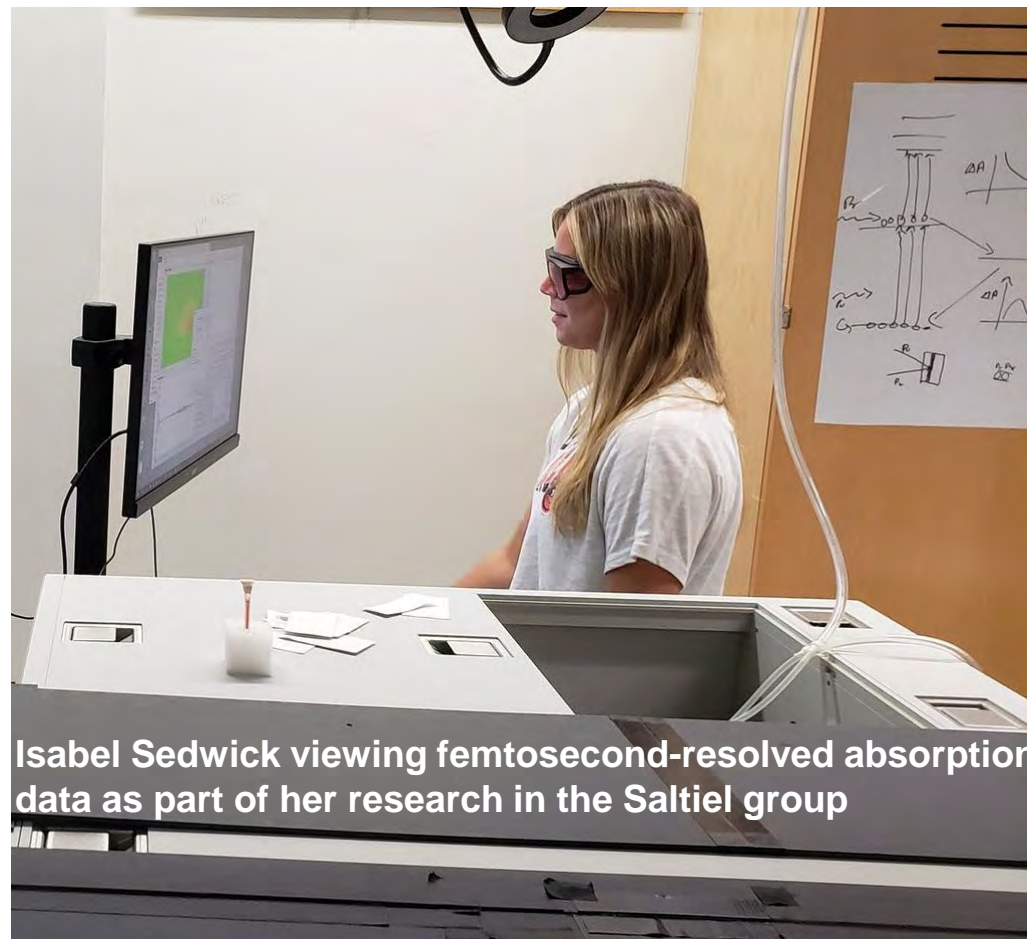




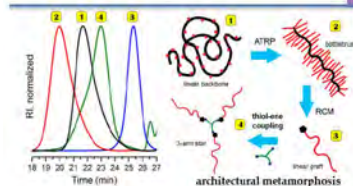
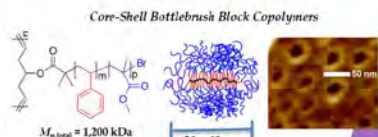
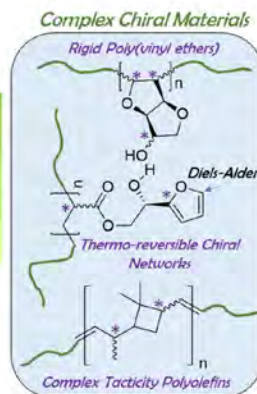
**Annaliese Franklin working with air-sensitive materials in the research group of Prof. Biwu Ma**

## **REU Students in the Lab**

**Summer 2023**



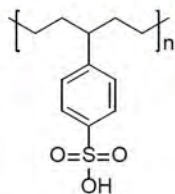
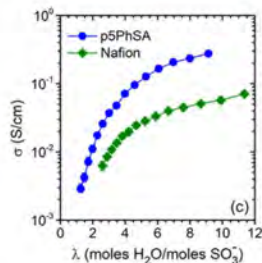
**Isabel Sedwick viewing femtosecond-resolved absorption data as part of her research in the Saltiel group**



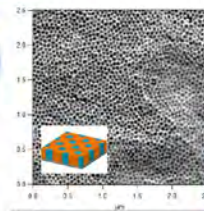
Performance and Bioinspired Elastomers

Biomass-based Plastics and Chemically Recyclable Materials

Advanced Precision Architectures and Assemblies for Energy Storage



FSU REU Photochemistry Café  
July 7, 2023

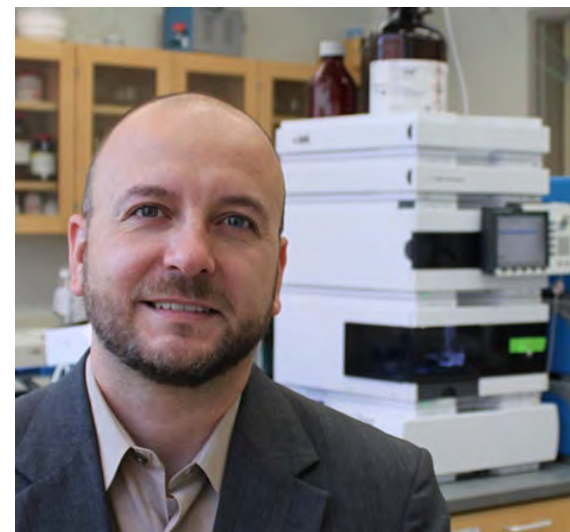


## Photochemistry Café “Research in the Kennemur Lab”

<http://www.chem.fsu.edu/reu-links/>

Prof. Justin Kennemur

July 7, 2023, 3:30-4:30 p.m.  
DLC 123, Tallahassee, Florida





# NSF-REU: Sunshine Institute for the Interaction of Light with Matter

Department of Chemistry and Biochemistry, Florida State University



## Photochemistry Café “Research in the Kennemur Lab”

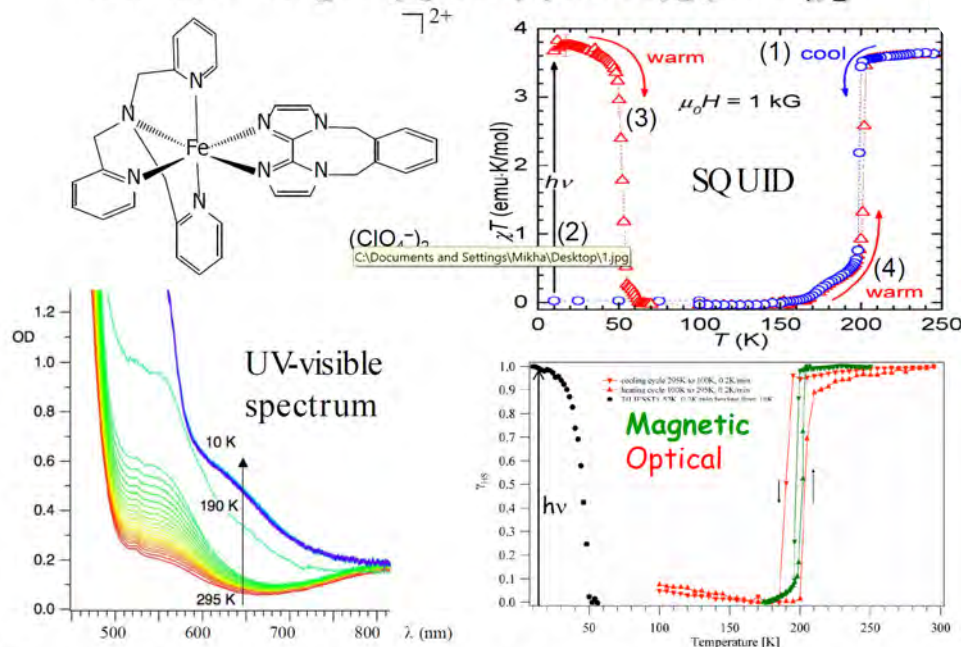
<http://www.chem.fsu.edu/reu-links/>

**Prof. Justin Kennemur**

July 7, 2023, 3:30-4:30 p.m.  
DLC 123, Tallahassee, Florida



Light-Induced **E**xcited **S**pin-**S**tate Trapping  
 LIESST in  $[\text{Fe}(\text{tpma})(\text{x}b\text{im})](\text{ClO}_4)_2$



Phan, H.; Chakraborty, P.; Calm, Y.; Chen, M.; Kovnir, K.; Keniley, L. K.; Hoyt, J. M.; Knowles, E. S.; Besnard, C.; Meisel, M.; Hauser, A.; Achim, C.; Shatruk, M. *Chem. Eur. J.* 2012, 18, 15805

Photochemistry Café  
 “Bistability in Molecular Materials:  
 From Spin-State Switching to  
 Controlling Molecular Spin Qubits”

<http://www.chem.fsu.edu/reu-links/>

Prof. Michael Shatruk

July 11, 2023, 9:00-10:00 a.m.

DLC 123, Tallahassee, Florida







**NSF-REU: Sunshine Institute for the Interaction of Light with Matter**  
*Department of Chemistry and Biochemistry, Florida State University*



**Photochemistry Café**  
***“Bistability in Molecular Materials:  
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## Trip to Tyndall Air Force Base

[www.tyndall.af.mil](http://www.tyndall.af.mil)

July 13, 2023

(depart 7:40 a.m. EDT for a 10:00 a.m. CDT tour)





# NSF-REU: Sunshine Institute for the Interaction of Light with Matter

*Department of Chemistry and Biochemistry, Florida State University*



## ... and Then to Mexico Beach, Florida

July 13, 2023



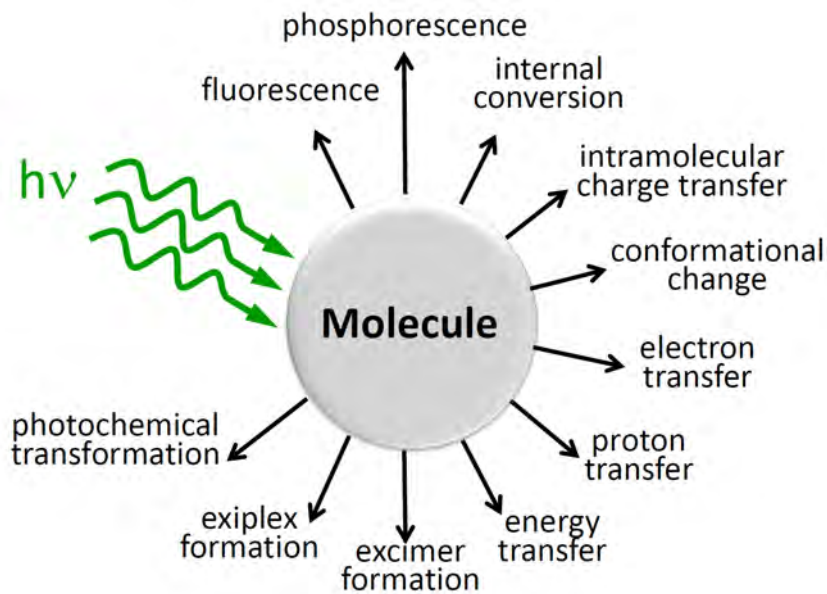


## REU Weekly Seminar

July 14, 2023 - DLC 123, 3:30 p.m. with Dr. Ed Hilinski

Discussion about activities of the preceding week and research  
and a survey





## Photochemistry Café

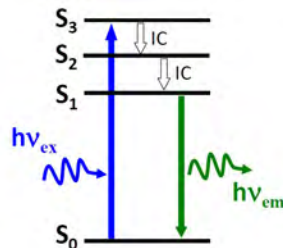
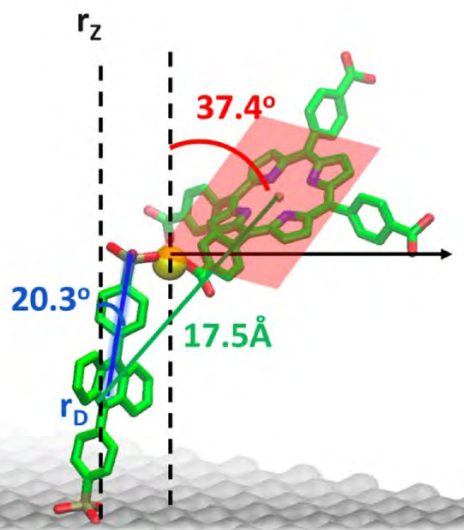
### “Understanding and Controlling Molecular Excited State Processes Using Metal Oxide Surfaces”

<http://www.chem.fsu.edu/reu-links/>

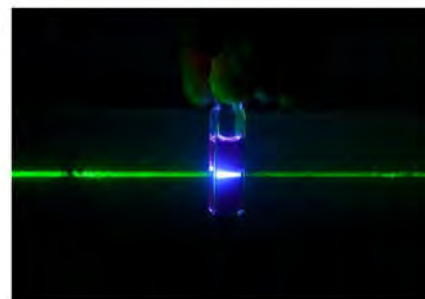
Prof. Kenneth Hanson

July 18, 2023, 9:00-10:00 a.m.

DLC 123, Tallahassee, Florida



$h\nu \rightarrow h\nu$



$h\nu \rightarrow h\nu$





**NSF-REU: Sunshine Institute for the Interaction of Light with Matter**  
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**Photochemistry Café**  
**“Understanding and Controlling  
Molecular Excited State Processes  
Using Metal Oxide Surfaces”**

<http://www.chem.fsu.edu/reu-links/>

**Prof. Kenneth Hanson**

July 18, 2023, 9:00-10:00 a.m.

DLC 123, Tallahassee, Florida





## **Student Research Presentation**

# **“Scrubbing Terminal Olefin Contaminants to Optimize ROMP of Cyclopentene Derivatives”**

**Daniel W. Larsen - Ithaca College**

**Nadia Z. Singleton & Prof. Justin Kennemur - Florida State University**

**July 21, 2023 - DLC 123, Tallahassee, Florida**





## **Student Research Presentation**

### ***“Low Dimensional Eco-Friendly Organic Manganese Halide Hybrid for X-ray Scintillation”***

**Annaliese Franklin - Bridgewater College**

**Tunde B. Shonde, Oluwadara J. Olasupo & Prof. Biwu Ma - Florida State University**

**July 21, 2023 - DLC 123, Tallahassee, Florida**





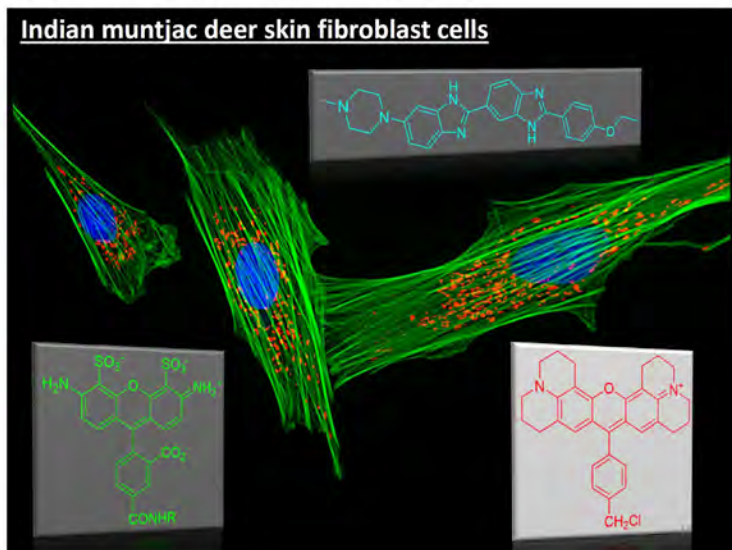


**NSF-REU: Sunshine Institute for the Interaction of Light with Matter**  
*Department of Chemistry and Biochemistry, Florida State University*

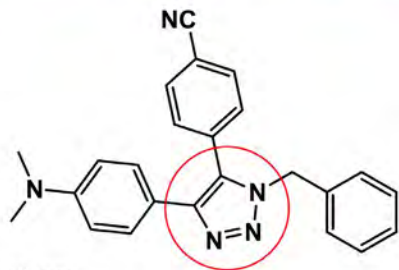


**Dinner at  
Kool Beanz Café**  
<http://www.koolbeanz-cafe.com/>  
with  
REU Participants,  
In-Lab Mentors &  
Faculty Advisors  
July 25, 2023 - 6:00 p.m.  
Tallahassee, Florida





A Fluorescent Triazole



## Photochemistry Café “Fluorescent Organic Molecules”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Lei Zhu**

July 25, 2023, 9:00-10:00 a.m.  
DLC 123, Tallahassee, Florida





**NSF-REU: Sunshine Institute for the Interaction of Light with Matter**  
*Department of Chemistry and Biochemistry, Florida State University*



**Photochemistry Café**  
**“Fluorescent Organic Molecules”**

<http://www.chem.fsu.edu/reu-links/>

**Prof. Lei Zhu**

July 25, 2023, 9:00-10:00 a.m.  
DLC 123, Tallahassee, Florida





## **Student Research Presentation**

### ***“Synthesis of Lamellarins Through Photochemical Reactions”***

**Christopher Cornejo – Elmhurst University**

**Brandon Nusser & Prof. Lei Zhu - Florida State University**

July 27, 2023 - DLC 123, Tallahassee, Florida





## **Student Research Presentation**

### ***“Influencing Excited State Properties of PDI Using ALD”***

**Dominic J. Willadsen – Concordia University, Wisconsin**

**Erica Knorr & Prof. Kenneth Hanson - Florida State University**

**July 27, 2023 - DLC 123, Tallahassee, Florida**





## **Student Research Presentation**

### ***“A Novel Strategy for the Synthesis of Non-Symmetrical Pyrenes”***

**Makaya Robinson – St. Mary’s College**

**Nikolas Dos Santos & Prof. Igor Alabugin - Florida State University**

July 28, 2023 - DLC 123, Tallahassee, Florida





## **Student Research Presentation**

**“Photochemistry of 1,4-Diphenyl-1,3-Butadiene (DPB)”**

**Isabel Sedwick – Loyola University Maryland**

**Sumesh Krishnan & Prof. Jack Saltiel - Florida State University**

**July 28, 2023 - DLC 123, Tallahassee, Florida**





**Student Research Presentation**  
***“Tetranuclear Clusters for Application in  
Quantum Information Science”***

**Diana Nazario Torres – Pontifical Catholic Univ., Puerto Rico**  
**Shubham Bisht, Dibya Mondal & Prof. Michael Shatruk - Florida State University**  
July 28, 2023 - DLC 123, Tallahassee, Florida







## **Student Research Presentation**

### ***“Organic Semiconductor Annihilators for Triplet-Triplet Annihilation Upconversion”***

**Josh Birke – Southeast Missouri State University**

**Colette Sullivan, Rachel Weiss & Prof. Lea Nienhaus - Florida State University**

**July 28, 2023 - DLC 123, Tallahassee, Florida**





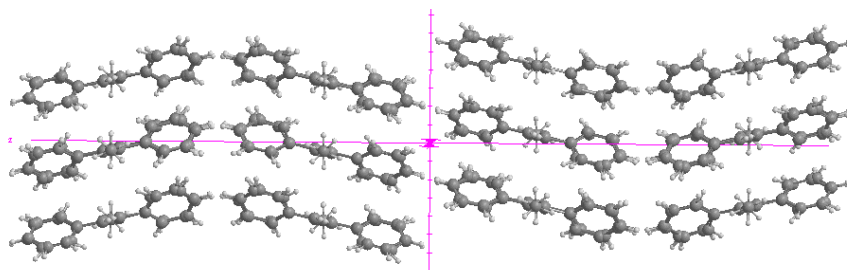
## Some morning beverages, food, and conversation

July 29, 2023 - Black Dog Café, Tallahassee, Florida with Dr. Ed. Hilinski





Dirac's Mystery Instrument



*Molecules* **2023**, *28*, 4086, doi: [10.3390/molecules28104086](https://doi.org/10.3390/molecules28104086)

## Photochemistry Café “A State Energy Diagram, Photophysical Processes, and Photochemistry”

<http://www.chem.fsu.edu/reu-links/>

**Prof. Ed Hilinski**

August 1, 2023, 9:00-10:00 a.m.

DLC 123, Tallahassee, Florida





# NSF-REU: Sunshine Institute for the Interaction of Light with Matter

*Department of Chemistry and Biochemistry, Florida State University*



## Student Poster Session

August 3, 2023 in CSL Lobby





**NSF-REU: Sunshine Institute for the Interaction of Light with Matter**  
*Department of Chemistry and Biochemistry, Florida State University*



## After the Poster Session Session

August 3, 2023 in CSL Lobby





## The Last REU Weekly Seminar for Summer 2023

August 4, 2023 - DLC 123 and DLC 5<sup>th</sup> Floor Conference room  
3:30-5:00 p.m. with Drs. Ed Hilinski & Bridget DePrince





## Lunch

August 5, 2023 – Volcano Hot Pot, Tallahassee, Florida with Dr. Ed Hilinski





## Dinner

August 5, 2023 – Relish-Big Tasty Burgers, Tallahassee, Florida with Dr. Ed Hilinski







## All the REU Student Participants Have Departed

August 6, 2023

