

**Travis J. Schuyler**  
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## Education

- University of Kentucky (UK), Lexington, KY** Fall 2016 – Present  
Graduate School, Doctor of Philosophy  
Major: Chemistry  
Cumulative GPA: 3.93
- Northern Kentucky University (NKU), Highland Heights, KY** Fall 2012 – Spring 2016  
Major: Chemistry, ACS and Biochemistry tracks  
Minor: Physics  
Cumulative GPA: 3.54  
Graduation date: May 2016

## Experience

### Department of Chemistry, UK

*Research Assistant, Dr. Marcelo Guzman's research group* January 2017 – Present

- Built trace gas sensor packages for deployment on small unmanned aerial systems (i.e. drones), including complete hardware assembly and programming
- Applied custom sensor packages to measure atmospheric trace gases

*Teaching Assistant, General Chemistry* August – December 2016

- Prepared and delivered recitation lectures weekly
- Assisted students with questions regarding general chemistry coursework

*Chemistry Tutor* August 2016 – Present

### Department of Chemistry, NKU

*Research Assistant, Dr. Isabelle Lagadic's research group* May 2015 – May 2016

- Prepared, characterized, and analyzed polymer-organoclay composites
- Optimized reaction conditions for surface-initiated polymerization
- Developed microwave-assisted reaction techniques
- Synthesized and characterized mesoporous silicates as drug carriers May – July 2013
- Conducted drug loading experiments
- Proposed alternative drug loading procedures

*Teaching Assistant, Analytical Chemistry Lab* August – December 2015

- Assisted students in their lab experiments
- Graded lab reports
- Prepared and presented pre-lab explanation sessions

### Department of Physics, NKU

*Research Assistant, Dr. Nathan De Lee's research group* September 2015 – May 2016

- Assembled telescopes, equipped with Blue-Violet filters and CCD cameras
- Calibrated GPS systems and telescope tracking for demonstrations to the public
- Determined metallicity content of Cepheid variable stars

*Physics Tutor, Athletics Department, Northern Kentucky University* May – July 2015

## Institut Universitaire de Technologie (IUT) Lannion, France

Research Assistant, Dr. Sébastien Gauthier's research group

May – July 2014

- Synthesized and characterized dye molecules for Dye-Sensitized Solar Cell (DSSC) applications.
- Conducted multiple synthesis experiments under inert atmosphere
- Proposed alternative procedures for deprotection and acidification reactions

## Publications

1. “Unmanned Aerial Systems for Monitoring Trace Tropospheric Gases”. Schuyler, T.J. and **Guzman\***, **M. I.** *Atmosphere* **2017**, *8*, 206.

## Presentations

1. “Developing Drones for Air Sampling”. **Schuyler\***, **T.J.**  
*Northern Kentucky University Department of Chemistry Seminar Series*, February 6<sup>th</sup>, 2019 – Highland Heights, KY. (Oral)
2. “Trace Gas Quantification with the UKySonde During the 2018 LAPSE-RATE campaign”. Schuyler, T.J.; Bailey, S; and **Guzman\***, **M. I.**  
Unmanned Aircraft Systems (UAS) in Geosciences: Research and Development. *American Geophysical Union Fall Meeting*, December 10<sup>th</sup>-13<sup>th</sup>, 2018 – Washington, D.C. (Poster)
3. “Quantification of Trace Gases with small UAS during the 2017 CLOUDMAP Campaigns”. Schuyler, T.J.; Bailey, S; Jacob, J; and **Guzman\***, **M.I.**  
*ISARRA Conference*. July 9<sup>th</sup>-12<sup>th</sup>, 2018 – Boulder, CO. (Poster)
4. “Air Quality Determination with Small Unmanned Aerial Systems”. Schuyler, T.J.; Bailey, S; Jacob, J; and **Guzman\***, **M.I.**  
*NAFF Symposium*. March 23<sup>rd</sup>, 2018 – Lexington, KY. (Poster)
5. “Using Unmanned Aerial Systems for the Detection of Trace Gases in the Atmosphere”. Schuyler, T.J.; Bailey, S; Jacob, J.; and **Guzman\***, **M. I.**  
Use of Unmanned Aerial Systems in Atmospheric Science symposium. *American Geophysical Union Fall Meeting*, December 11<sup>st</sup>-14<sup>th</sup>, 2017 – New Orleans, LA. (Oral)
6. “Using Unmanned Aerial Systems for the Detection of Trace Gases in the Atmosphere”. Schuyler, T.J.; Bailey, S; Jacob, J.; and **Guzman\***, **M. I.**  
*Gordon Research Conference, Atmospheric Chemistry*. August 2<sup>nd</sup>-3<sup>rd</sup>, 2017 – Newry, ME. (Poster)
7. “Polymer-organoclay nanocomposites prepared by microwave-assisted surface-initiated polymerization from thiol-functionalized organoclays”. Schuyler, T.J.; Coeurdray, M.; Mbow, K. and **Lagadic\***, **I.**  
Clay/Polymer composites: Nano-clays & Other Natural Nanoparticles symposium of the PMSE program. *251th ACS National Meeting*, March 13<sup>th</sup>-17<sup>th</sup>, 2016 – San Diego, CA (Oral)
8. “Internationalizing Undergraduate Chemistry Research at Northern Kentucky University” Schuyler, T.J.; Emery, S.; Gauthier, S.; Robin-Le Guen, F.; Mot, A.; Silaghi-Dumitrescu, R. and **Lagadic\***, **I.**  
*Posters-at-the-Capitol Research Celebration*, February 19<sup>th</sup>, 2016. Frankfort, KY. (Poster)
9. “Optimization of the reaction conditions in the preparation of polystyrene-organoclay composites by microwave-assisted surface-initiated polymerization”. Schuyler, T.J.; Maël Coeurdray, and **Lagadic\***, **I.**  
*Kentucky Academy of Science Annual Meeting*. November 14<sup>th</sup>, 2015 - Highland Heights, KY (Oral)
10. “Optimization of the reaction conditions in the preparation of polystyrene-organoclay composites by microwave-assisted surface-initiated polymerization”. Schuyler, T.J.; Maël Coeurdray, and **Lagadic\***, **I.**  
*CINSAM 15<sup>th</sup> Anniversary Celebration*. October 9<sup>th</sup>, 2015 - Highland Heights, KY (Poster)
11. “Optimization of the reaction conditions in the preparation of polystyrene-organoclay composites by microwave-assisted surface-initiated polymerization”. Schuyler, T.J.; Maël Coeurdray, and **Lagadic\***, **I.**

*Heather Bullen Interdisciplinary Summer Research Celebration, August 26<sup>th</sup>, 2015 – Highland Heights, KY (Poster)*

12. “Synthesis and photovoltaic performances of di-acetylide platinum complexes in Dye-Sensitized Solar Cells”. Schuyler, T.J.; Robin-Le Guen, F. and **Gauthier\*,S.**  
*249<sup>th</sup> ACS National Meeting, March 22<sup>nd</sup>-26<sup>th</sup>, 2015 - Denver, CO (Poster)*
13. “Synthesis and photovoltaic performances of di-acetylide platinum complexes in Dye-Sensitized Solar Cells”. Schuyler, T.J.; Robin-Le Guen, F. and **Gauthier\*,S.**  
*Interdisciplinary Summer Research Celebration, August 27<sup>th</sup>, 2014 – Highland Heights, KY (Poster)*

## Awards and Honors

- **NASA KY Space Grant:** For air quality measurements over volcanos with small unmanned aerial systems.
- **Outstanding Oral Qualifier Award (UK):** Awarded by the graduate program committee for standout achievements and plan of study during qualifying examination for PhD candidacy.
- **Provisional Patent:** For the invention of a trace gas quantification device for unmanned vehicles.
- **ISARRA Travel Grant (2018):** Award based on scientific merit for presentation at ISARRA conference.
- **Fast Start Award (UK):** A graduate school award given to one pre-qualifying student for their exceptional research progress, plus the completion of cumulative exams and success in the classroom.
- **Max Steckler Fellowship (UK):** A DGS-awarded fellowship given to incoming or continuing doctoral students in academic good standing.
- **Most Outstanding Senior, Chemistry Department (NKU):** This award was given on behalf of the faculty to recognize the academic success of a student amongst the graduating class.
- **Faculty Senate Award (NKU):** A university-wide award given to a senior student demonstrating exceptional skills and productivity in an independent study project, resulting in publication.
- **ACS Division of Inorganic Chemistry Travel Award (2015):** Award based on scientific merit for presentation at National ACS meetings.
- **Albert and Louise Cooper Memorial Scholarship (NKU):** Awarded for excellence in undergraduate chemistry research and pioneering international research collaboration.
- **Distinguished Scholarship (NKU):** Scholarship awarded to entering students with an ACT composite score of 33 or higher, a 3.75 or higher high school GPA and having demonstrated leadership ability and concern for their community.
- **Presidential Ambassador (NKU):** Students are interviewed, and hand selected by the president’s office to facilitate events hosted by the university president.
- **International Study Scholarship (NKU):** University scholarship for studying abroad, award based on essay entry and recommendation letter.
- **Beyond the Classroom Award (NKU):** Scholarship for studying abroad, award based on essay entry.
- **Phi Beta Delta, International Honor Society (NKU):** An invitation only society honoring students that have conducted and presented international research.

## Outreach

- **Solar Eclipse:** An event sponsored by NASA Kentucky to engage the general public in science related activities during the total solar eclipse. Flew demonstrations and collected data.
- **Science Demonstration:** Demonstrated the use of unmanned aerial systems (i.e. drones) for atmospheric chemistry at Glendover Elementary School.
- **Science Fair Judge:** Participated in the Maxwell Spanish Immersion Elementary School science fair as a judge providing feedback & inspiration to underrepresented children interested in STEM.
- **Chemistry Graduate School Recruitment:** Facilitated recruitment weekend for 30 prospective students.