

---

*(phone)*  
*(email)*  
*(web)*  
*(blueky)*  
*(linkedin)*

## **Highlights**

---

- **Graduate Degrees Awarded**
- **Research Team:**
- **Publication record summary:**
  
- **Research support summary:**
- **National Science Foundation CAREER Award**
- **Teaching:**
  
- **Leadership:**
  
- **Mentorship:**

## **Research Summary**

---

## Appointments

---

**Visiting Research Scientist - Sabbatical**

**Associate Professor**

**Assistant Professor**

**Assistant Professor**

**Postdoctoral Scholar**

*Mentors: Jan Vermant (ETH Zurich) and Michael De Volder (Cambridge)*  
**Research Chemist**

*Mentors: Kevin Gallagher (PPG) and Shelley Anna (CMU)*

## Education

---

**PhD in Chemical Engineering**

*Mentors: Dennis C. Prieve and Paul J. Sides*

**BS in Chemical Engineering**

## Honors and Awards

---

*Nominee*

*Nominee*

*Nominee*

*Nominee*





**Engineered Polypeptides as a Tool for Controlling Catalytic Active Janus Particles<sup>#</sup>**

---

**Catch like Adhesion of Red Blood Cells to Laminin in Sickle Cell Disease**

*bioRxiv preprint 2022.11.12.515898, Biophysical Journal*

**Surfactant Induced Catastrophic Collapse of Carbon Black Suspensions used in Flow Battery Application**

*arXiv:2209.12125 Journal of Colloid and Interface Science.*

**Three-Dimensional Sag Tracking in Falling Liquid Films**

*Langmuir*

**Anisotropic colloidal particles near a boundary<sup>#</sup>**

*Journal of Applied*

**Elastic-Scattering Measurements of Single, Oriented, Optically Trapped Particles**

*Journal of Quantitative*

*Spectroscopy and Radiative Transfer*

**Scattering Morphology Resolved Total Internal Reflection Microscopy (SMR-TIRM) of Colloidal Spheres<sup>#</sup>**

*Computational Mathematics and Modeling*

**DLVO Energy Landscape of a Janus Colloid with a Non-Uniform Cap Thickness**

*Physical Review E*

**Influence of PEG on the Clustering of Active Janus Colloids**

*arXiv preprint arXiv:2101.06206*

*Colloids and Surfaces A: Physicochemical and Engineering Aspects*

**Developing Scattering Morphology Resolved Total Internal Reflection Microscopy (SMR-TIRM) for Orientation Detection of Colloidal Ellipsoids**

*Langmuir*

**Single and Ensemble Response of Colloidal Ellipsoids to a Nearby AC Electrode**

*Colloids and Surfaces A: Physicochemical and Engineering Aspects*

**Efficient Sizing of Single Layer Graphene Oxide With Optical Microscopy Under Ambient Conditions**

*Carbon*

**Influence of Cap Weight On the Motion Of A Janus Particle Very Near A Wall**

*Physical Review E*

**Charged Nanoparticles Quench the Propulsion of Active Janus Colloids**

*ACS Omega*

**A Light Scattering Model for Total Internal Reflection Microscopy of Geometrically Anisotropic Particles**

*Journal of Modern Optics*

**Purification and Assembly of DNA-Stabilized Boron Nitride Nanotubes into Aligned Films**

*ACS Applied Nano Materials*



**Invited Seminars** *\*student, \$keynote*

---

**Stability, Rheology, and Electrical Properties of Carbon Black Slurries for Flow Batteries**

---

**Interactions, dynamics, and rheology of crowded colloidal suspensions**

---

**Watching Paint Dry: Noninvasive Detection of Defects in Coatings**

---

**Stability, Rheology, and Electrical Properties of Carbon Black Slurries for Flow Batteries**

---

**Anisotropic Colloidal Particles near a Boundary**

---

**Watching paint dry: Non-invasive detection of defects and skinning in drying complex fluids**

---

**Anisotropic colloidal particles near boundaries**

---

**Dynamics of multiphase fluids: Applications in sagging films and flowing suspensions**

---

**Anisotropic colloidal particles near boundaries**

**Measuring the Dynamics of Colloidal Particles with Evanescent Wave Scattering**

---

**Complex Colloidal Particles Near Boundaries**

---

**Complex Colloidal Particles Near Boundaries**

---

**Complex Colloidal Particles Near Boundaries**

---







**John Mays**  
**Matthew Pitell**  
**Isabel Papenbrock Romero**  
**Peter Howard**  
**Tyler Leibengood**  
**Steven Bengel<sup>&</sup>**  
**Mandy Huynh**  
**Sarah Buchahine<sup>&</sup>**  
**Kenneth Gregg**  
**Naik Yusifi<sup>&</sup>**  
**Marissa Trivisonno<sup>&</sup>**  
**Marola Issa<sup>&</sup>**  
**TJ Markiewicz**  
**Payton Lewis<sup>&</sup>**  
**Nandini Padaraju<sup>&</sup>**  
**John Juchnowski<sup>&</sup>,**  
**Jason Wolf<sup>&</sup>**  
**Ian Burns<sup>&</sup>**  
**Richard Schmitt<sup>&</sup>**  
**William Ivancic<sup>&</sup>**

**Students Supervised as Committee Member <sup>&</sup>CSU student**

---

**Samuel Ojo**  
**Sogol Asaei**  
**Steven Vecchi**  
**Vincent Tam**  
**Lianna Johnson**  
**Maura Sepesy**  
**Jacob Hostert**  
**Siddharth Rajupet**  
**Venkateswara Rao Kode<sup>&</sup>**  
**Blas Quiroga<sup>&</sup>,**  
**Sepehr Dejdari<sup>&</sup>,**  
**Adriaan Riet,**  
**Jeremy Loss<sup>&</sup>**  
**Kara Ufuoma<sup>&</sup>**  
**Kevin Otto<sup>&</sup>**  
**Tara Diba<sup>&</sup>**  
**James Deyling<sup>&</sup>**  
**Aaron Moran<sup>&</sup>**  
**Richard Schmitt<sup>&</sup>**  
**Supriya Upadyay<sup>&</sup>**  
**Claudine Lacdao<sup>&</sup>**



**ASEE/AIChE Summer School 2017:**

**Faculty Online Teaching and Design Course:**

**External Research Support**

---

**Amount**

**Agency**

**Title**

**Role**

**Duration**

**Amount**

**Agency**

**Title**

**Role**

**Duration**

**Amount**

**Agency**

**Title**

**Role**

**Duration**

**Amount**

**Agency**

**Title**

**Role**

**Duration**

**Amount  
Agency  
Title**

**Role  
Duration**

**Amount  
Agency  
Title  
Role  
Duration**

**Amount  
Agency  
Title  
Role  
Duration**

**Amount  
Agency  
Title**

**Role  
Duration**

**Amount  
Agency  
Title  
Role  
Duration**

**Amount  
Agency  
Title**

**Role  
Duration**

**Amount  
Agency  
Title**

**Role  
Duration**

**Amount**  
**Agency**  
**Title**  
**Role**  
**Duration**

**Amount**  
**Agency**  
**Title**

**Role**  
**Duration**

**Amount**  
**Agency**  
**Title**

**Role**  
**Duration**

**Amount**  
**Agency**  
**Title**

**Role**  
**Duration**

**Amount**  
**Agency**  
**Title**

**Role**  
**Duration**

**Pending External Proposals**

