# Inaugural Meeting of the Practical Optical Design Seminar Welcome to PODS!

02/12/2020

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# PRESENTATION AGENDA

- Introductions
- Goals of PODS
- Group Communications
- Group File Sharing
- Project Discussion

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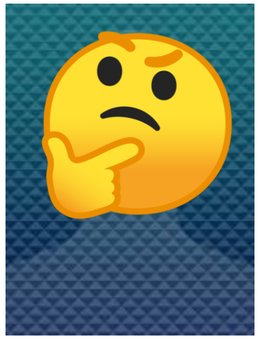
# Introducing…
# The First Generation of PODS!









Marcos your face is missing from OpSci's website ☹

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# Goals of PODS

- ***Mission Statement: Our goal with PODS is to bring various talents together to tackle challenging optical design problems and communicate our progress at a professional level!***
- Learn advanced design topics *through* design work
- Produce research & communicate it to academia
  - Give updates to school on a semesterly basis!

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# Group Communications

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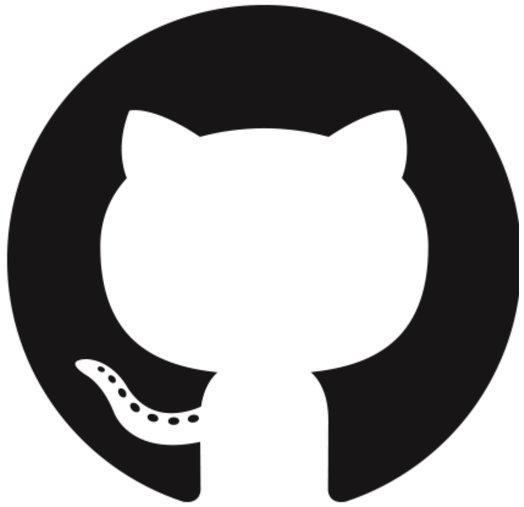
# Group File Sharing

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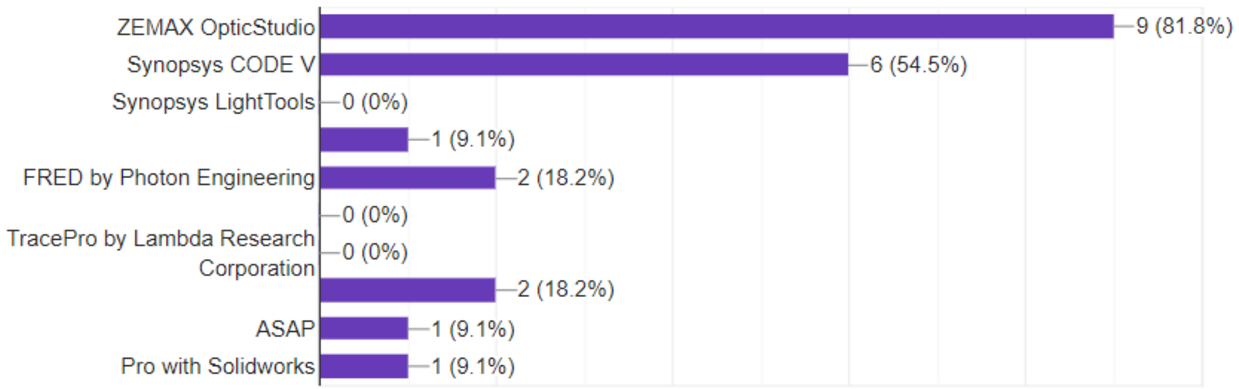
# Project Discussion

- No meeting next week – IA has booked all the conference rooms!
- ***02/25/2020* – Come with 2 project ideas & pitch them to the group**
- Consider: Novelty, Design Difficulty…feel free to ask professors for ideas!

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# Inspiration

- Previous works conducted by a former design group
- IODC, Optical Engineering & Applications, etc.
- It can *actually* help to build specifications if you get playful with the project inspiration…

**Optimal Power Distribution for Minimizing Pupil Walk in a 7.5X Afocal Zoom Lens**

**Wanyue Song, Yang Zhao, Rebecca Berman, S. Yvonne Bodell, Eryn Fennig, Yunhui Ni, Jonathan C. Papa, Tianyi Yang, Anthony J. Yee, Duncan T. Moore, Julie L. Bentley**
*The Institute of Optics, University of Rochester, 275 Hutchison Rd, Rochester, NY 14627*
*wsong5@ur.rochester.edu*

**Design study for a 16x zoom lens system for visible surveillance camera**

Anthony Vella*, Heng Li, Yang Zhao, Isaac Trumper, Gustavo A. Gandara-Montano, Di Xu, Daniel K. Nikolov, Changchen Chen, Nicolas S. Brown, Andres Guevara-Torres, Hae Won Jung, Jacob Reimers, Julie Bentley
The Institute of Optics, University of Rochester, Wilmot Building, 275 Hutchison Rd, Rochester, NY, USA 14627-0186

**Comparing optical design complexity of high zoom ratio lenses within the VIS, SWIR, and LWIR**

Jake R. Rosvold*, Luis Alemán Castañeda, Jaren Ashcraft, Dylan Beckman, Maximillian C. Bruggeman, Pellegrino Conte, Shenghan Gao, Qi Jin, Nicholas Kochan, Zilong Li, Yuxuan Liu, Matthew Page, John Piotrowski, Jordan Rabinowitz, Colleen Stone, Julie L. Bentley
The Institute of Optics, University of Rochester, 275 Hutchison Rd, Rochester, NY, USA 14627-0186

**Determining optimal first-order focal lengths of zoom lenses through Monte Carlo simulations**

Maximillian C Bruggeman[1a], Julie L Bentley[2a]

[a] University of Rochester, Institute of Optics. 480 Intercampus Drive. Rochester, NY 14627

David Lippman of the University of Rochester, for his paper titled "The Design of a High Zoom Ratio Riflescope." Lippman used CODE V to design a riflescope in three parts—objective, zoom relay, and eyepiece—and then combine the parts with precision pupil matching. The final result is an advanced design form based on a foundation of first-order optics.

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# Inspiration pt. 2

## The solution

p. 4

**BAT Drone**

**Bandit Apprehension and Tracking Drone:**

**A zoom lens to fight crime**

OPTI 585 Project Proposal:
Illumination Modeling & Optimization of The Bat Signal

Jaren Ashcraft

February 12, 2020

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