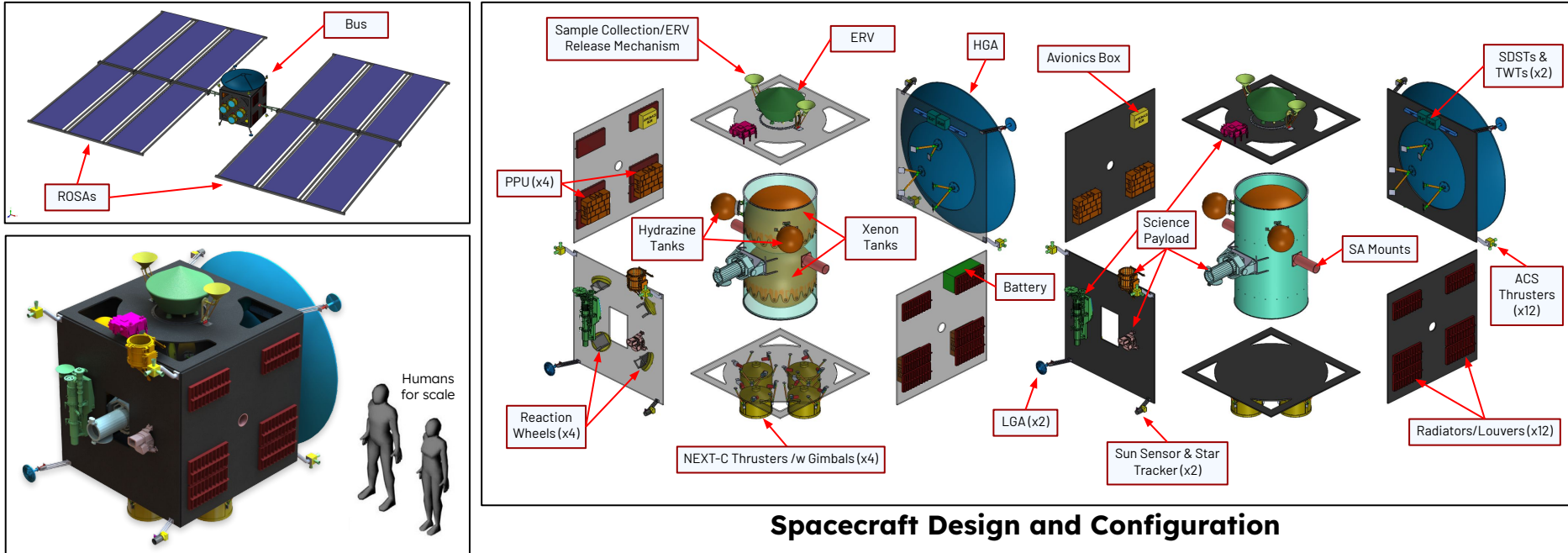


# Erik Kramer | Mock Europa Sample Return Mission

**Project** → A pre-Phase A Europa sample return mission proposal with details for all subsystems

**Tasks** → Design of **structures** subsystem, **CAD** of all spacecraft components/configurations, **systems engineering** work



# UCLA

## Objectives

- Develop a proposal, including all spacecraft subsystems, to return a water plume sample from Europa
- Launch within 2030-2033 and have a mission duration of 10-12 years

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# UCLA

## Process

- Used **SolidWorks** to design and model 100+ spacecraft components
- Tracked parts list, mass, and power through linked design spreadsheets, **MEL** and **PEL**
- Assisted other subsystems with **design iterations** and **trade studies**

- [illegible]

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## Results

- Produced a comprehensive SEP mission concept, including spacecraft design, that satisfies all level 1 to 3 requirements and lasts 11.14 years
- Collaborated to produce a 130 page report documenting the design and mission proposal

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