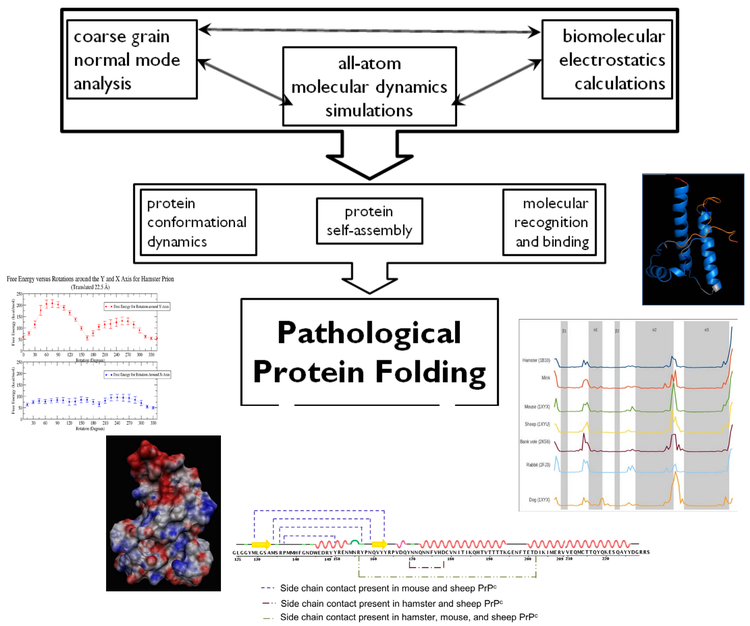
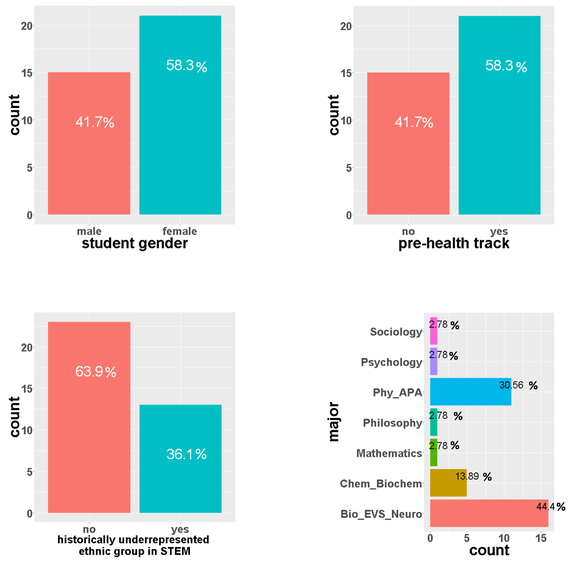
Self-assessment of the undergraduate research experience

Arst&Sciences – Physics
Patricia Soto
October 6, 2016

Disciplinary Research



Research group demographics



Motivation

- Research experiences mold a researcher's career through different career stages, from undergraduate student to independent researcher
- Each phase requires a distinct set of skills, training and mentoring
- Undergraduate research considered as scholarly work and as education
- Sudents' learning to self-assess their performance is an invaluable tool to guide their cognition and metacognition of the research enterprise
- Ignatian pedagogy paradigm

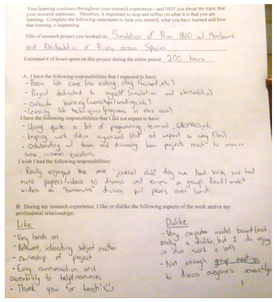
Description of the instrument

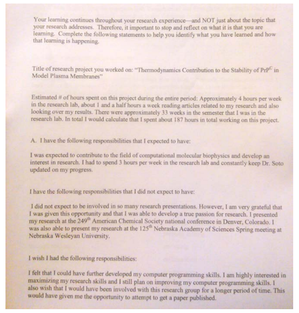
The instrument prompts students to::

Cognitive domain:
- Reflect on expectations
- Reflect on unexpected responsibilities and tasks
- Write a technical executive summary

Affective domain:
- Write responsibilities they wish they had
- Reflect on likes and dislikes
- Write an overall reflection
- Reflect on perceived personal growth

Psychomotor domain:
- Reflect on technical skills developed

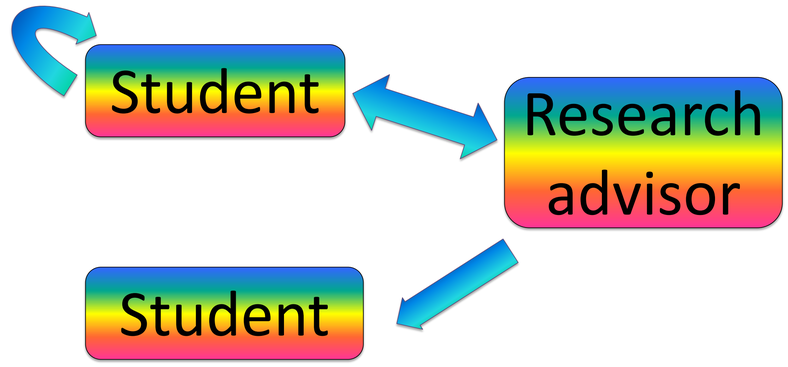




Perceived gains from the research experience

Cognitive domain:
- Critical, independent thinker
- Dealing with ambiguity: no right nor wrong, just a result
- Data interpretation
- Better sense of "research"
- Understand physics better

Affective domain:
- Improved self-confidence
- Perseverance
- Dealing with frustration
- Push out of comfort zone
- Question my judgement
- Curious and sensitive to other research
- This type of research is not a fit for me
- More professional
- Skills in networking and collaboration
- Communication skills: written, oral, poster presentations
- Effective time management
- Interested in software/ usefulness of scientific computing

Psychomotor domain:
- Troubleshooting
- Using scientific computing tools

Implications