# What makes teaching physics effective for life science students?

**Catherine Crouch and Ben Geller**

**in collaboration with:**

- **Curriculum developers and PER researchers at Maryland, Minnesota, and elsewhere**
- **Biology and Chemistry faculty**
- **Ann Renninger (Education)**

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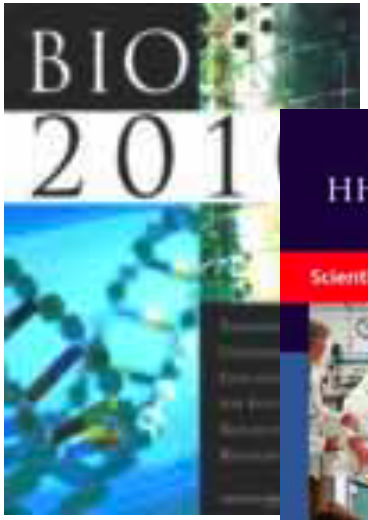
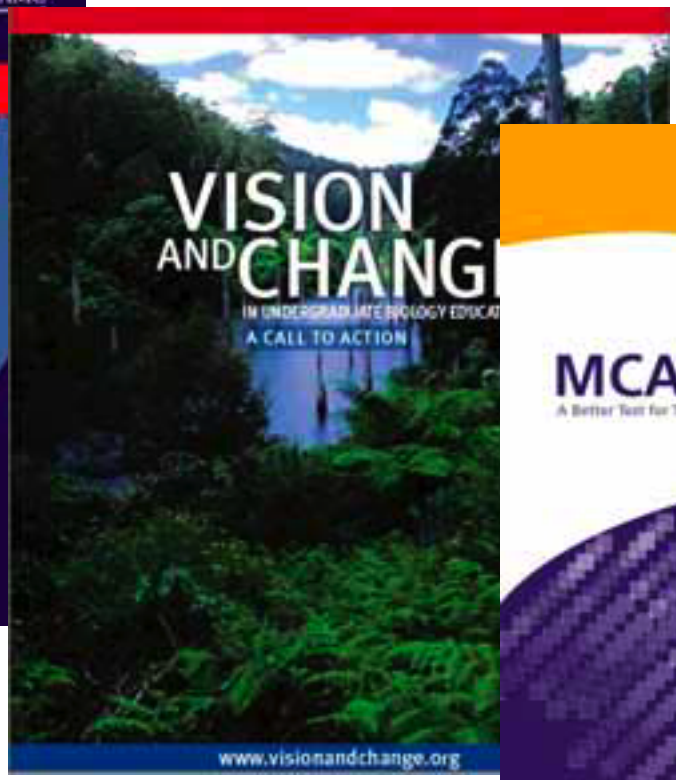
# Calls for Reform: IPLS

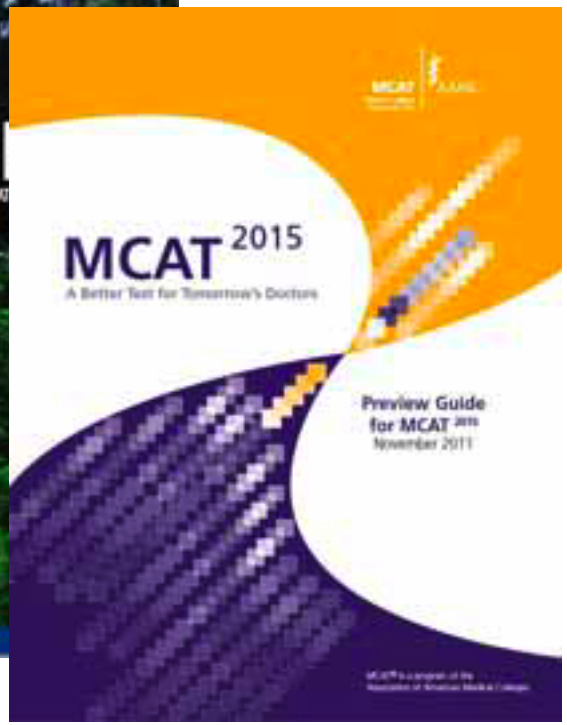



2003


2009




2011




2013

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# Physics 3L/4L at Swarthmore

- Catherine has collected data on several iterations of 4L, and we are collecting more this semester as I teach 4L (including student interviews done by a collaborator at UMD).

- 3L will go live next fall for the first time!

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# Research questions

- How do life science examples aid students in learning physics?
- What role does interest and affect play in interdisciplinary learning?
- Do students use physics in their upper division bio and chem coursework and in their research?
- How do life science students view modeling and simplification?

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# Methodology

- The best PER research combines **quantitative** (statistical) analysis of pre/post survey questions with more **qualitative** analysis (interviews, ethnographic classroom observation, open-ended survey questions)

- There is an opportunity to gain skills that are relevant to both teaching and research

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# To learn more ....

**If interested, please get in touch with Ben Geller to discuss this further:**

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And, if you ever want to chat about teaching physics or science education more generally, feel free to stop by SC L40!

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