

# SPECIALIST MEETING— *Spatial Thinking* Across the College Curriculum

December 10–11, 2012  
Upham Hotel  
Santa Barbara, California

## Objectives:

There is now convincing evidence that spatial abilities are related to both success and participation in STEM disciplines. More generally, there is an increasing recognition of the importance of spatiality as a unifier of academic disciplines, including the social sciences, arts, and humanities, sometimes referred to as a “spatial turn.” But it is also widely acknowledged that spatial thinking is not fostered in our educational system and that current practice depends more on selection of the most able students for spatially demanding disciplines than on fostering the spatial intelligence of all students. This meeting will bring together cognitive scientists, disciplinary experts, and college administrators to examine how to best educate spatial thinking at the college level. An overarching goal will be to prioritize a research agenda to evaluate current approaches to spatial education, fill gaps in our knowledge, and consider how a curriculum in spatial thinking can best be implemented at the college level.

## Meeting Structure:

This 2-day specialist meeting is organized by the Center for Spatial Studies (<http://spatial.ucsb.edu>) at the University of California, Santa Barbara, and the Spatial Intelligence and Learning Center (<http://www.spatiallearning.org/>). The meeting will include invited plenary presentations by experts on challenges of spatial thinking in different disciplines, cognitive analyses of spatial thinking processes, and current best practices in educating spatial thinking. In smaller breakout sessions, disciplinary experts, cognitive scientists, and college administrators will work together to identify the

### Call for Applications:

To respond to this announcement, please send a 2-page résumé and a 2-page position paper discussing your interest in these issues to Mary Hegarty ([hegarty@spatial.ucsb.edu](mailto:hegarty@spatial.ucsb.edu)) by **September 24, 2012**. Participants will be selected by the organizing committee and notified by October 12. Subject to approval, limited funding for travel and accommodation costs will be available to invited participants. Further details about this meeting will be posted at:

<http://www.spatial.ucsb.edu/events/meetings.php>

current state of our understanding of spatial thinking, identify gaps in our knowledge, and identify priorities for both research and practice in educating college-age spatial thinkers.



### Organizing committee:

Mary Hegarty,  
Mike Goodchild, &  
Don Janelle  
Univ. California, SB  
Nora Newcombe &  
Thomas F. Shipley  
Temple University  
Diana Sinton  
Univ. of Redlands

## Questions to be addressed include:

- What are best current practices in spatial education at the college level?
- What is the role of technologies, such as geographic information systems and virtual environment technologies, in developing spatial thinking skills?
- Can we identify a set of general spatial skills that are relevant to spatial thinking across several disciplines?
- Are spatial skills best trained in the context of a discipline or in a more general context? For example, if a student is taught to imagine cross sections in the context of a geology course, does this skill transfer to imagining sections in engineering or biology?
- What are the connections between “spatial thinking” courses and curricula organized for disciplines? For example, do all geography or geometry courses naturally or automatically support spatial thinking processes?
- What are learning outcomes for spatial thinking curricula, and what form should assessment take?
- What are the administrative challenges and opportunities for implementing spatial thinking courses and programs at the college level?