

Geoscience Academic Provenance Series Mapping Geoscience Student Populations' Pathways

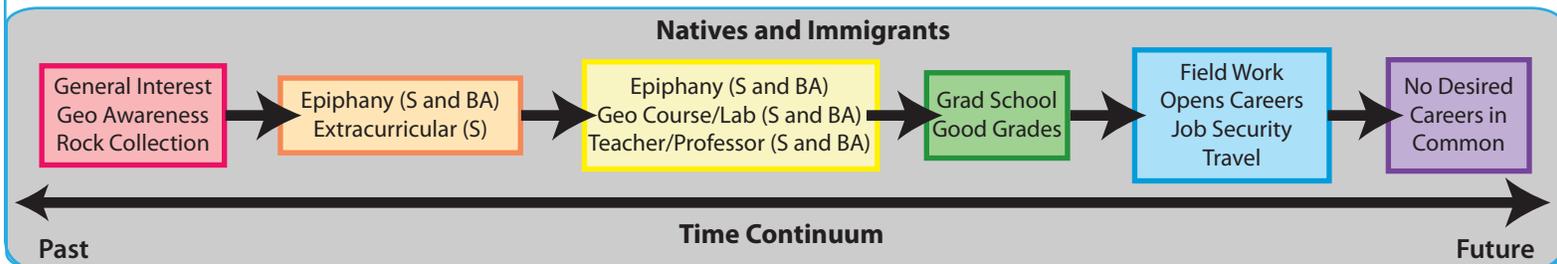
Houlton's pathway model (2010) established a theoretical framework for identifying reasons for attraction to and attrition from the geoscience major (see Currents #45-47). Houlton used Academic Provenance Analysis to map geoscience students' experiences temporally; it described the linear progression from students' initial interests through their future ambitions. Geoscience student populations' pathways for Natives and Immigrants are visually depicted to illuminate similarities and differences in their career trajectories.

Pathway Steps

- Innate Attributes/Interest Sources
- Pre-College Critical Incidents
- College Critical Incidents
- Current or Near Future Goals
- Expected Career Attributes
- Desired Career Choices

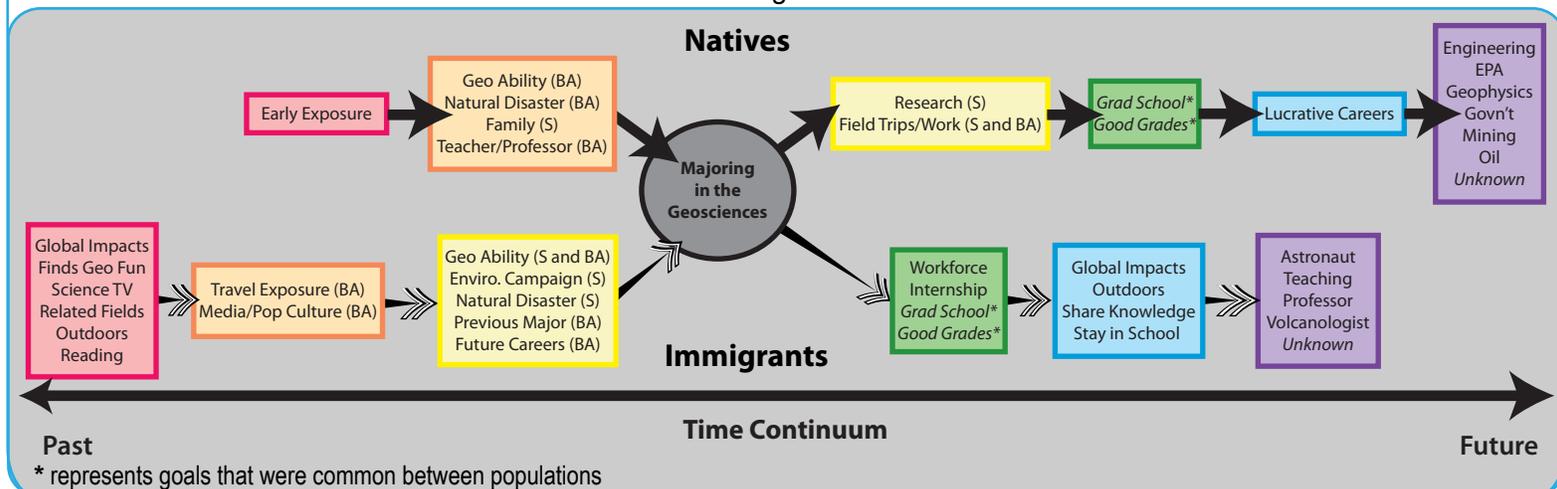
Similarities

Interests, critical incidents, goals and career attributes listed within each pathway step are those that span both populations' Academic Provenance Analysis. These overarching components may lead to effective strategies for departments to attract and retain students into the geoscience major. Geoscience courses or labs and influences from a teacher or professor were particularly prominent incidents, demonstrating the importance of academic experiences at the undergraduate level.



Differences

The key distinction between Natives' and Immigrants' pathways is their entry points into the geoscience major: Natives formally enter the geosciences earlier than Immigrants, indicating highly effective pre-college critical incidents. Implementing strategies that engage undergraduate geoscience students in outreach activities to introduce K-12 students to pre-college critical incidents may result in lower attrition among existing geoscience majors and increased freshmen enrollments. Career plans do not overlap between Native and Immigrant populations: Natives pursue industry-based careers while Immigrants pursue research or academic careers. Synthesizing the differences between student populations may inform recruitment and retention initiatives for different geoscience sectors.



This is the last of four Geoscience Currents on the topic of Geoscience Academic Provenance. AGI is hosting a **GeoWebinar** to discuss this set of Geoscience Currents on **August 23, 2011 from 1:00-1:30 pm US EDT**. Register at: www.agiweb.org/workforce/webinars.html

To read Houlton's full study, go to: http://www.eas.purdue.edu/riggslab/Houlton_Final_Thesis.pdf **-Heather R. Houlton**