Exploring four billion years of persistent habitability on a dynamic early Earth…

…to guide NASA’s mission-specific search life on distant worlds.
## EXPANDING UCR’S ASTROBIOLOGY RESEARCH MISSION

### ALTERNATIVE EARTHS ASTROBIOLOGY CENTER

<table>
<thead>
<tr>
<th>PROPOSED SCOPE OF FACULTY EXPERTISE AT UCR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT</strong></td>
</tr>
<tr>
<td><strong>FUTURE</strong></td>
</tr>
</tbody>
</table>

### EARLY EARTH RESEARCH

<table>
<thead>
<tr>
<th>FACULTY EXPERTISE</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCR Alternative Earths Team of the NASA Astrobiology Institute</td>
<td><strong>UCR is a known as a world leader:</strong> Biogeochemistry (Track oxygenation and other chemical signatures of habitability and life). Paleontology &amp; Organic Chemistry (Track evolving life).</td>
</tr>
<tr>
<td>Planetary Geology (Explore planetary-scale controls on habitability and environmental change). Atmospheric Modeling (Model the atmospheres of Earth’s habitable states).</td>
<td><strong>UCR relies on partner institutions:</strong></td>
</tr>
<tr>
<td>UCR relies on other active teams of the NASA Astrobiology Institute</td>
<td><strong>Exoplanet Detection</strong> Detect planets outside our solar system with access to current and upcoming NASA missions and ground-based instruments. <strong>Exoplanet Characterization</strong> Characterize habitability of exoplanets using their spectroscopic signatures.</td>
</tr>
</tbody>
</table>
| Other Teams of the NASA Astrobiology Institute |}

UCR relies on partner institutions:
OUTREACH

Cosmic Thursdays

**ALTERNATIVE EARTHS?**
What our planet’s history may tell us about life in the universe

Prof. Timothy Lyons
Earth Sciences Department UC Riverside

**THURSDAY OCTOBER 15 - 7:00 PM**
Bourns Hall - Room A265
Free & open to the public
Suggested parking in lot 10
Information: maridawe@ucr.edu

---

**EVOLUTION OF LIFE**
Tracking using ancient lipid biomarkers preserved in petroleum & rocks

Prof. Gordon Love
Earth Sciences Department UC Riverside

**THURSDAY NOVEMBER 12 - 7:00 PM**
Bourns Hall - Room A265
Free & open to the public
Suggested parking in lot 10
Information: maridawe@ucr.edu

---

**MOPS, ROPES & BATHMATS**
Earth’s enigmatic earliest multicellular animals

Prof. Mary Droser
Department of Earth Sciences UC Riverside

**THURSDAY DECEMBER 3 - 7:00 PM**
Bourns Hall - Room A265
Free & open to the public
Suggested parking in lot 10
Information: maridawe@ucr.edu
COMMUNITY ENGAGEMENT

MERCURY
TRANSIT & BEYOND

5.9.16

TELESCOPE VIEWING
- Prof. Bahram Mobasher (UCR)
- UCR Parking Lot 30
- 8:30 to 11:30 AM

PUBLIC TALK
- Prof. Stephen Kane (SFSU)
- UCR Extension Center
- 6:00 to 7:00 PM

Information: 951-255-9706 / www.astro.ucr.edu / astrobiology@ucr.edu
Free parking & open to the public
NASA's Minority University Research and Education Project (MUREP) selected UC Riverside as one of 10 minority serving universities (out of 76 proposals) for 5 years of funding to support research collaboration with JPL.