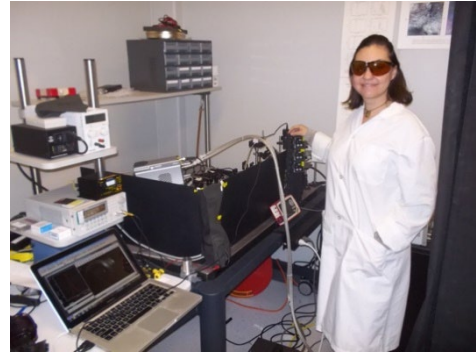


**Name:** Svetlana Shkolyar

**Code:** 698

**Home institution:** UMD College Park

**Name of task:** 691.005 - Center for Life Detection



**What do you do for CRESST:**

Dr. Shkolyar is the community engagement lead for the Center for Life Detection. This involves leading the community engagement strategy of the CLD project to increase community awareness, use, participation, and vetting in tools developed to help life detection mission planning efforts. The main tool developed so far has been the [Life Detection Knowledge Base \(LDKB\)](#), a community webtool developed to evaluate strategies to search for evidence of life beyond Earth, with an emphasis on recognizing potential false positive and false negative results. Dr. Shkolyar participates in group discussions and decision-making processes related to science traceability and life detection technology definition, manages all LDKB curator activities as the webtool functionalities are improved and new content is added, oversees manuscript preparation efforts to result from the workshops and community input activities for the LDKB, engages relevant communities by sharing the tool's utility (at conferences, NASA Assessment Group meetings, through student opportunities, etc.) and leads document management and reporting of CLD engagement activities. She has mentored 10 interns and 5 Visiting Scholars as part of this effort so far.

**Background/Autobiography:**

I was born in the former Soviet Union (Moldova) and my family immigrated to the US when I was 5. Throughout my childhood, I was fascinated with all things space, and the search for life in the universe, but I didn't know that the latter topic could be a legitimate career. I studied physics (B.S.) and space studies (M.S.) and even science communication (M.A.), trying to figure out how to combine my interests in the space sciences and engaging the public in the most captivating question, "Are we alone?" I then discovered astrobiology, which I pursued during my PhD studies, specializing in fossil biosignature searches on Mars. I did my first postdoc at Carnegie Institute of Science. I came to Goddard in 2019 for my second postdoc, planning to join my husband, Marc Neveu, who was already a scientist here, also working through CRESST UMD. Marc and I met at Goddard in 2009 as interns, decided to pursue graduate studies in astrobiology together (at ASU), and are currently both back here working at Goddard. We've come full circle!

**Favorite part of being a CRESST Scientist:**

CRESST allows me to have the flexibility to apply for and to choose the projects to which I want to contribute as well as the work effort that I put into them. I was lucky to go to a part-time schedule (due to the pandemic and a young child at home) to achieve the family-work balance that I desired.

**Highlight of research as a CRESST Scientist:**

I enjoy being able to use my skills and interests to pursue projects which are making an impact in the endeavor of life detection. This is an endeavor that I've been wanting to be part of my whole life, even since before I knew this career path was possible.

**Selected recent peer-reviewed publications:**

J. R. Hollis, and the Mars 2020 SHERLOC team, including **S. Shkolyar** (2022). The power of paired proximity science observations: Co-located data from SHERLOC and PIXL on Mars. *Icarus*, 387, 115179.

K. Hickman-Lewis, et al., including **S. Shkolyar** (2022). In situ identification of microbial biosignatures using co-located Perseverance rover analyses: a case study from the Palaeoarchaean, *Astrobiology*, 20(6), 377-393.

**S. Shkolyar**, et al. (2022). Estimating peak shock pressures on Mars using spectroscopic techniques: Implications for geochronology studies on returned samples, *Earth, Moon, and Planets*, 126(2).

E. A. Lalla, et al., including **S. Shkolyar** (2022). Raman characterization of the CanMars campaign samples using the ExoMars Raman Laser Spectrometer Simulator, *Astrobiology*, 22(4).

**S. Shkolyar** et al. (2021). Cerium as a Biosignature Mimicker: Implications for UV fluorescence and Raman spectroscopy instruments for astrobiology missions, *Icarus*, 354, 114093.

Lalla, E. **Shkolyar, S.**, et al. (2020). Structural and vibrational analyses of CePO<sub>4</sub> synthetic monazite samples under an optimized precipitation process, *Journal of Molecular Structure*, 1223, 129150.

**Shkolyar, S.** and Farmer, J. D. (2018). Biosignature Preservation Potential in Evaporites: Impacts of Diagenesis and Implications for Mars Exploration, *Astrobiology*, 18(11).

**Shkolyar, S.**, et al. (2018). Detecting Kerogen as a Biosignature Using Colocated UV Time-Gated Raman and Fluorescence Spectroscopy, *Astrobiology*, 18(4).

#### **Selected public presentations and appearances:**

[Science Decoded podcast](#), 2020

NASA Mars rover [episode](#), The Debrief Podcast, 2020 [*Invited*]

Ask an Astrobiologist, [Mars 2020 Rover episode](#)

[Cosmic Conversations](#), lecture series, Academy of Sciences Morrison Planetarium, 2020

[NASA@My Library program](#) presentation, 2020 [*Invited*]

NASA Space Science Education Consortium, 2019

NASA Astrobiology Booth, US Science and Engineering Festival, 2017

Astrobiology Science Conference public lecture, "[Where Will We Find Alien Life?](#)", 2017

National Astronomical Research Institute of Thailand, [Stopover Astronomer](#) lecture, 2016

Mentor of the Month speaker series, [SAGANet.org](#), 2013 [*Invited*]

NASA Mars Educator Conference, 2011 [*Invited*]

#### **List of selected awards:**

2018, Cover Art, *Astrobiology Journal*, Nov. 2018 issue

2016, Outstanding Graduate Student Award (ASU)

2016, Graduate and Professional Student Association Graduate Research Award

2015, NASA Astrobiology Early Career Collaboration Award

2015, Graduate Excellence Award, ASU College of Liberal Arts and Sciences

2014, Strategic University Research Partnership Proposal (SURP)

2013, ASU Space Grant Fellowship

2011, Robert H. Goddard Memorial Scholarship

2011, NASA Experimental Program to Stimulate Competitive Research (EPSCoR) Graduate Assistantship

#### **Three fun facts:**

1. I have a 3.5-year old named Shaya whose favorite planet is Mars. That's totally my fault.
2. When I was younger, I was an avid swing and salsa dancer. In graduate school, I was even on a Latin dance performance team.
3. My favorite hobby is food. I love to cook and experiment with both local, seasonal and totally untraditional ingredients which equally serve as the inspirations to my recipe experiments. I also love to explore restaurants wherever I go, during travels, or locally (in the DC area).