

ShortTitle: UraVanDB v2

Title: Uranium-Vanadium database development

Project leads and contact details:

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- Tom Pool, International Nuclear, Inc. tpool2@qwestoffice.net

Suggested team size: 2-4

Logistics: Can work from anywhere, with periodic meetings (and free lunch) in Berthoud 143

Project description: By combining historical mining records with modern data science techniques, you will create a powerful and accessible web-based platform to support decision-making related to future U-V exploration and development as well as environmental remediation, land management, and long-term monitoring. Specifically, you will use Python and SQL to modernize and visualize historical data (1948-2024) from 4,390 uranium and vanadium production sites across the western United States.

A previous group of students has created a PostgreSQL database and web app with tabular and map views. You will work to

1. improve the visualization of the web app,
2. clean up the backend database and query tools, and
3. provide robust documentation of the historical records that compose the database (including OCR (optical character recognition) techniques to extract data from scanned paper records).