\*Infrastructure Description\* Because it is not possible for people to read all of the increasingly large SE research literature, researchers and practitioners may miss important information. Systematic Literature Reviews (SLRs), a principled method for identifying, analyzing, and synthesizing research, are primarily manual and time consuming (weeks to months of effort). While there are manual and automatic methods that reduce cost, we lack a consensus about combining or eliminating these methods. We need such a consensus to provide scientific repeatability, improve coverage, reduce human labor and errors, and allow for iteration and improvement of SLRs. We propose SLR Artificial Intelligence Toolkit (SAInT), an integrated environment with a mash-up of manual SLR tools and AI-based tools to substantially automate the entire SLR process. SAInT will document the manual approaches, provide implementations of the automated approaches, and contain case studies on applying these methods. Our recent work identified case studies where SE researchers searched 10,000 papers to identify the 100 relevant to an SLR query. We will collect materials from dozens more studies (to reuse and evolve methods that can query numerous research papers). SAInT will provide a lightweight API and data interchange facilities so users can build workflows by plugging-in existing tools. We will also create plug-ins for missing functionality. We will host SAInT in a public Github repository to enable use by industrial and research practitioners. \*CISE Research Focus\* Le Goues, Shaw, et al. recently lamented the poor connection between research discoveries and practitioner needs. They dream of "a system that allows researchers and practitioners to reliably synthesize research results into actionable, real-world guidance," and literature reviews that make "explicit recommendations on practice, clearly labeled with strength of recommendation reflecting the level of rigor of the underlying evidence." Accordingly, SAInT will answer identify methods appropriate for reading large numbers of SE research reports. SAInT will help researchers produce unbiased, repeatable, comprehensive SLRs. SAInT will use AI to automate (or partially automate) search and selection of primary studies; extraction, evaluation, and synthesis of those papers; and updates of published SLRs to incorporate new research results. SAInT will allow researchers to evaluate and improve SLR workflows. \*Projected Budget\* $1.6M