



School Health Map

Jordan Beach, Forrest Close, Jacob Loving, Sierra Parsons
Department Kinesiology, University of New Hampshire, Durham, NH 03824



Introduction

Our mission is to advance the health and well-being of students by empowering educators, researchers and health professionals with the data and tools needed to advocate for strong, equitable, and comprehensive school policies.

To accomplish this and obtain success, we will design and develop a website with back-end/front-end usability and add public data integration with a map visualization.

Requirements

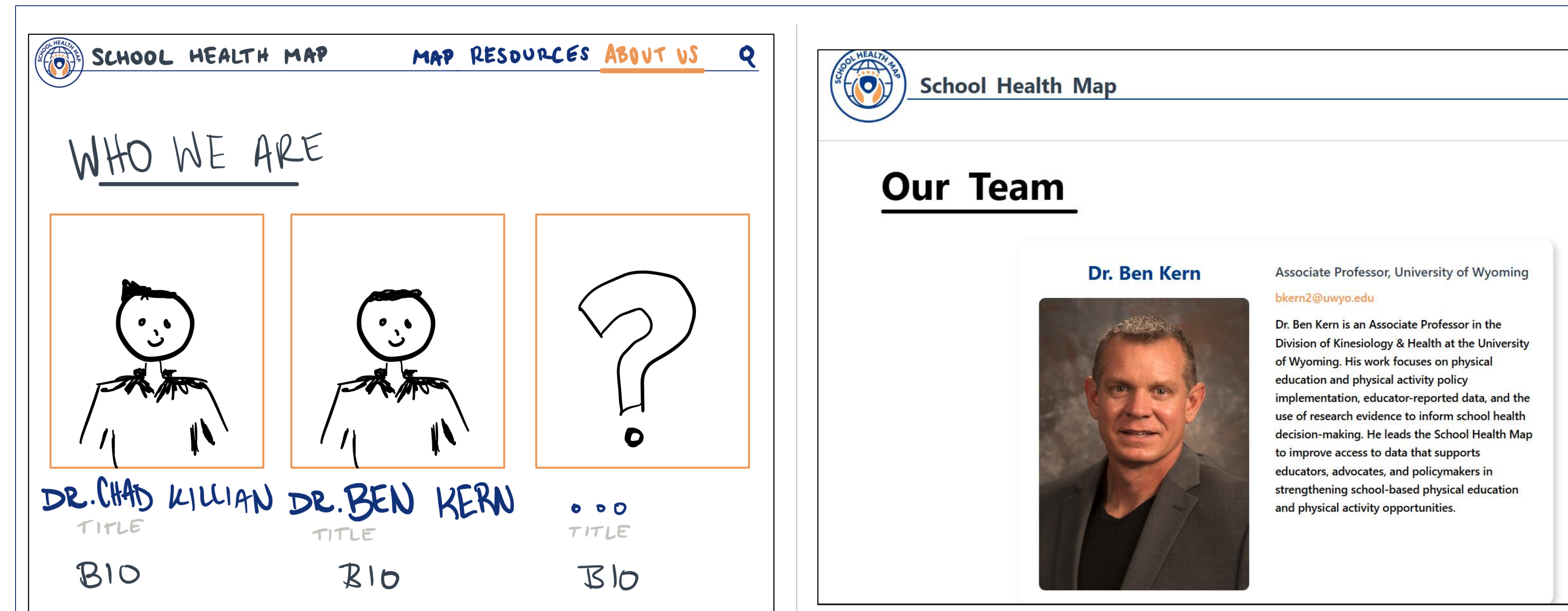
Functional

- System stores surveyed data categorized by state, county, and district
- Produces an interactive map of the U.S. that outputs data depending on the area selected
- Website includes a navigation menu to easily access all pages
- State policy reports are linked to their location on the map
- Public data can be integrated

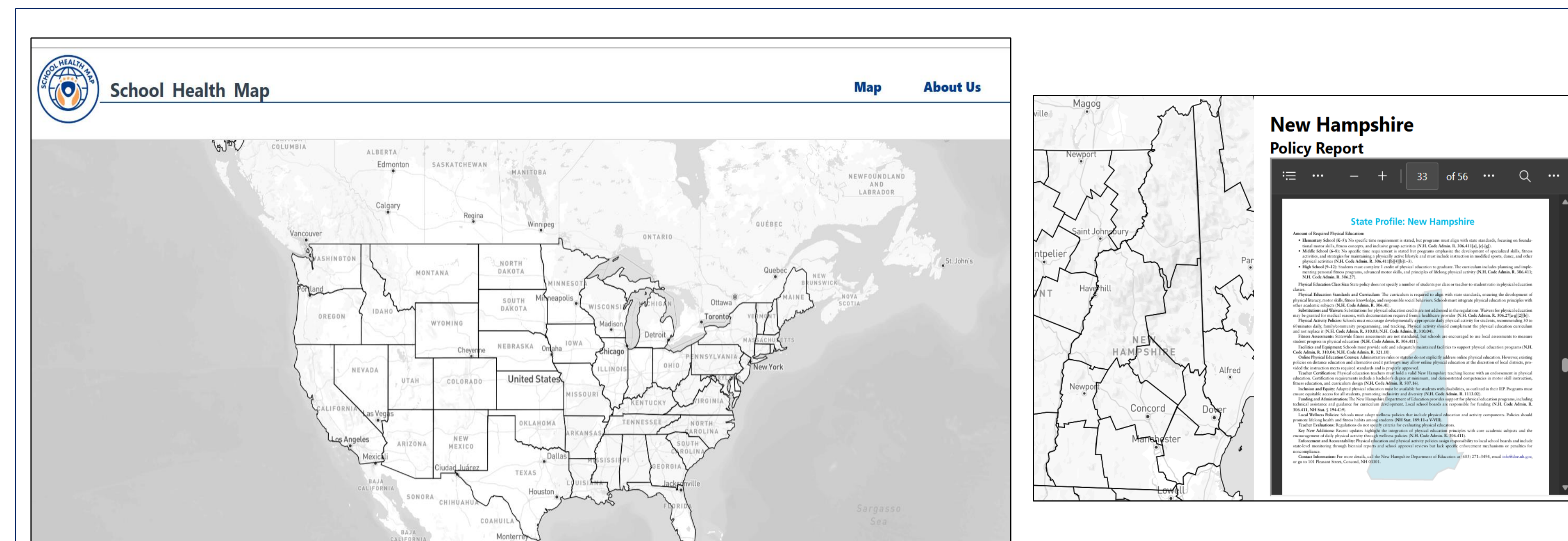
Non-Functional

- System loads the map at a good speed
- Website is easily navigated by inexperienced users
- Map is easy to use and survey questions are comprehensive
- Increase in survey size is supported
- Website can function on major web browsers
- Map responses are accurate to surveyed data

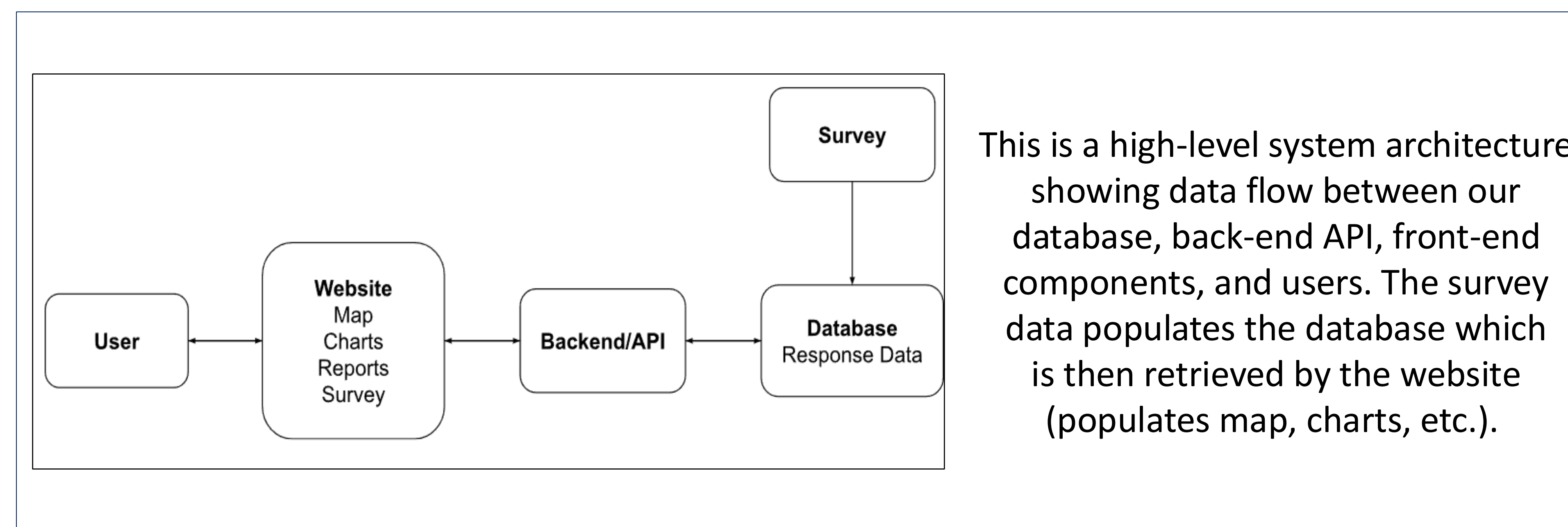
Design



This shows the wireframe (left) and final (right) about us page that includes the people actively involved with the project. There are cards for each person with their picture, name, title within the project, and a small bio about them and their involvement.



The image on the left shows the current map page when zoomed out with no state, county, or district selected. If a state is selected, then the policy report for that state will appear to the right of the map. More black borders will appear depending on how zoomed in the user is. For example, the left image shows only state borders, while the right includes county borders as well.



This is a high-level system architecture showing data flow between our database, back-end API, front-end components, and users. The survey data populates the database which is then retrieved by the website (populates map, charts, etc.).

Implementation/Testing

PERN Stack Implementation

- PostgreSQL is a relational database to store, organize, and retrieve our data with SQL
- Express is a web framework for Node.js that helps to connect the frontend to database
- React is the frontend library for building the UI components
- Node.js is a run time environment that allows us to run JavaScript on the back-end

Tools

Mapbox is a high-quality mapping platform used to implement our map with custom themes and add data/layers that integrate nicely on the web. Vite is a testing tool that helps us run the front-end of the website so visual features can be adjusted and implemented correctly. AWS is a cloud service that is used to host and manage the websites database infrastructure.

Testing

Our testing includes validating database connectivity, API responses, and frontend rendering. Tools ease the process, like Vite which ensures correct UI behavior. Each member tests their own code before pushing to main branch.

Results

The result of our project is a functional website implemented with many of the requirements we saw most important. This includes appealing webpage designs, an interactive map consisting of surveyed data, descriptions of the project goals and sponsors, and links to related research articles and state reports.

Evaluation and Conclusion

We have built a solid foundation in reaching our goal to provide school health information to interested users. While our website may not incorporate all the features we initially wanted, it presents our data in an efficient and user-friendly way. We were limited by our inexperience in web design and development, but our project successfully met the criteria we gave at the beginning of the year. Any future work will consist of refining current codebase, while adding new features to the site.

Acknowledgments: Sponsors Chad Killian and Ben Kern, Advisor Craig Smith

Abstract –

School Health Map provides an enjoyable and easy to way to learn about the physical health programs from school districts across the nation! The interactive map display allows users to customize and view different surveyed results from thousands of polled teachers. You can also find related articles, learn about the School Health team, and read our project vision: to advance the health and well-being of students by empowering educators, researchers, and health professionals with the data and tools needed to advocate for strong, equitable, and comprehensive school health policies.