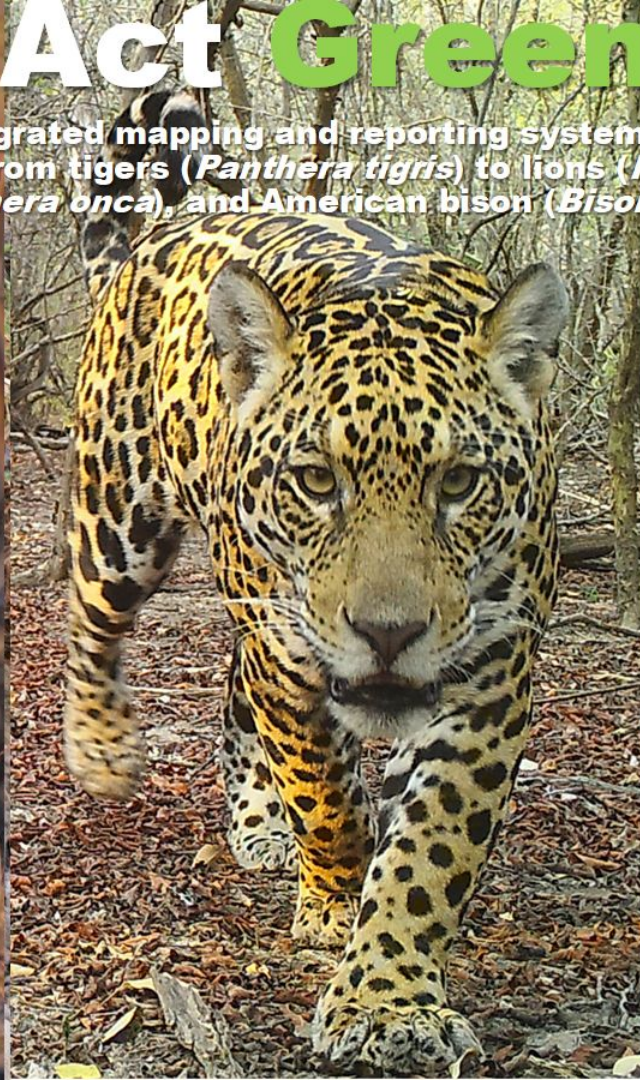


# Act Green

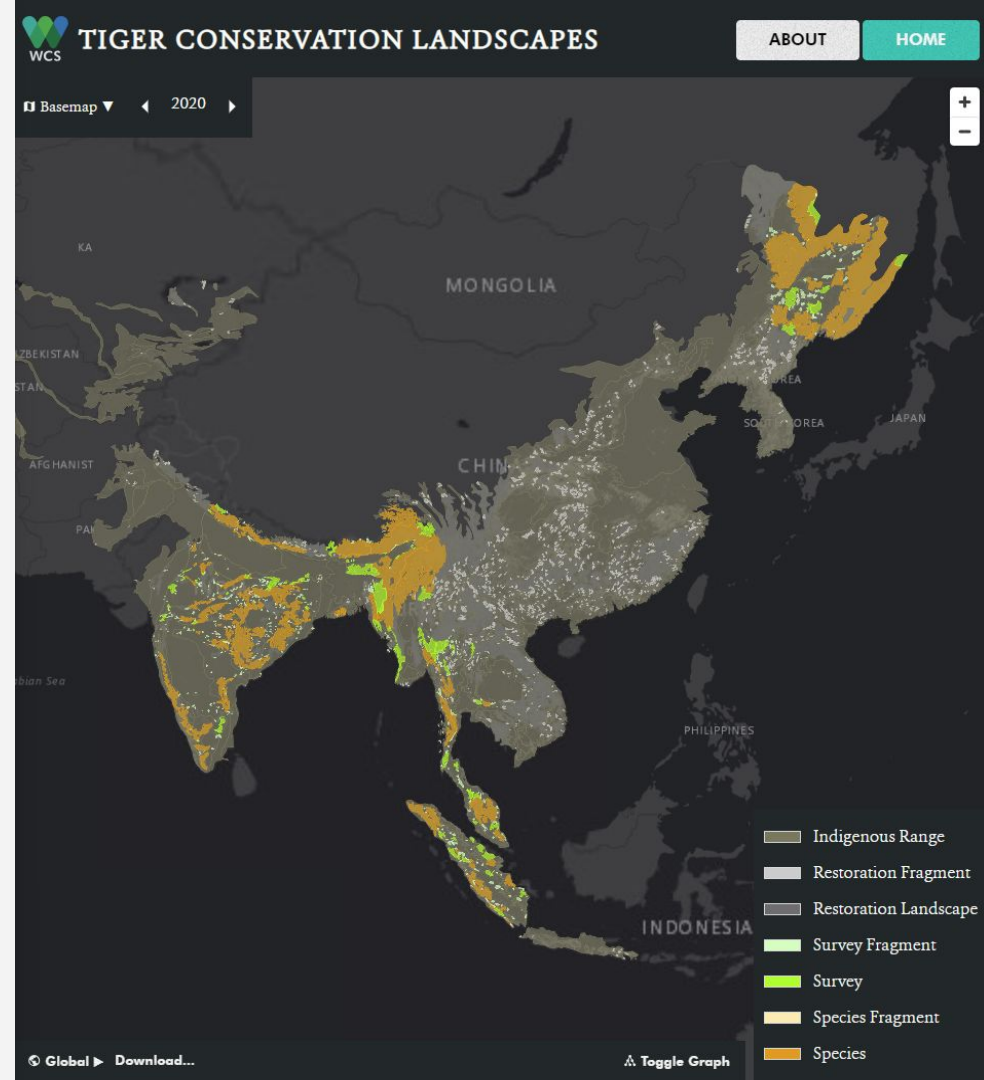
A near-real time integrated mapping and reporting system for re-wilding efforts: extending a model from tigers (*Panthera tigris*) to lions (*Panthera leo*), jaguars (*Panthera onca*), and American bison (*Bison bison*)





# Tiger Conservation Landscapes

- Uses a hierarchical framework to delineate landscapes for tiger conservation
- Inputs include land cover, Human Impact Index, and landscape fragmentation patterns, plus species observations
- Produces a map of 'landscapes', classified as restoration and conservation



# Act Green

Validating the Tiger Conservation Landscape Framework by extending the model to three species with different habitat requirements and geographies - American Bison (North America, grasslands, herbivore), Jaguar (Central-South America, largely forest, predator) and Lion (Africa, largely savanna, predator)



# Act Green

Validating the Tiger Conservation Landscape Framework by extending the model to three species with different habitat requirements and geographies - American Bison (North America, grasslands, herbivore), Jaguar (Central-South America, largely forest, predator) and Lion (Africa, largely savanna, predator)...but also more:

- Updating and forecasting the Human Impact Index to 2050
- Integrating remotely-sensed information on fences into American Bison landscape delineation
- Extending the modelling framework to produce future predictions of habitat availability for all three species
- Pushing the usage of these models in end-user decision-making processes

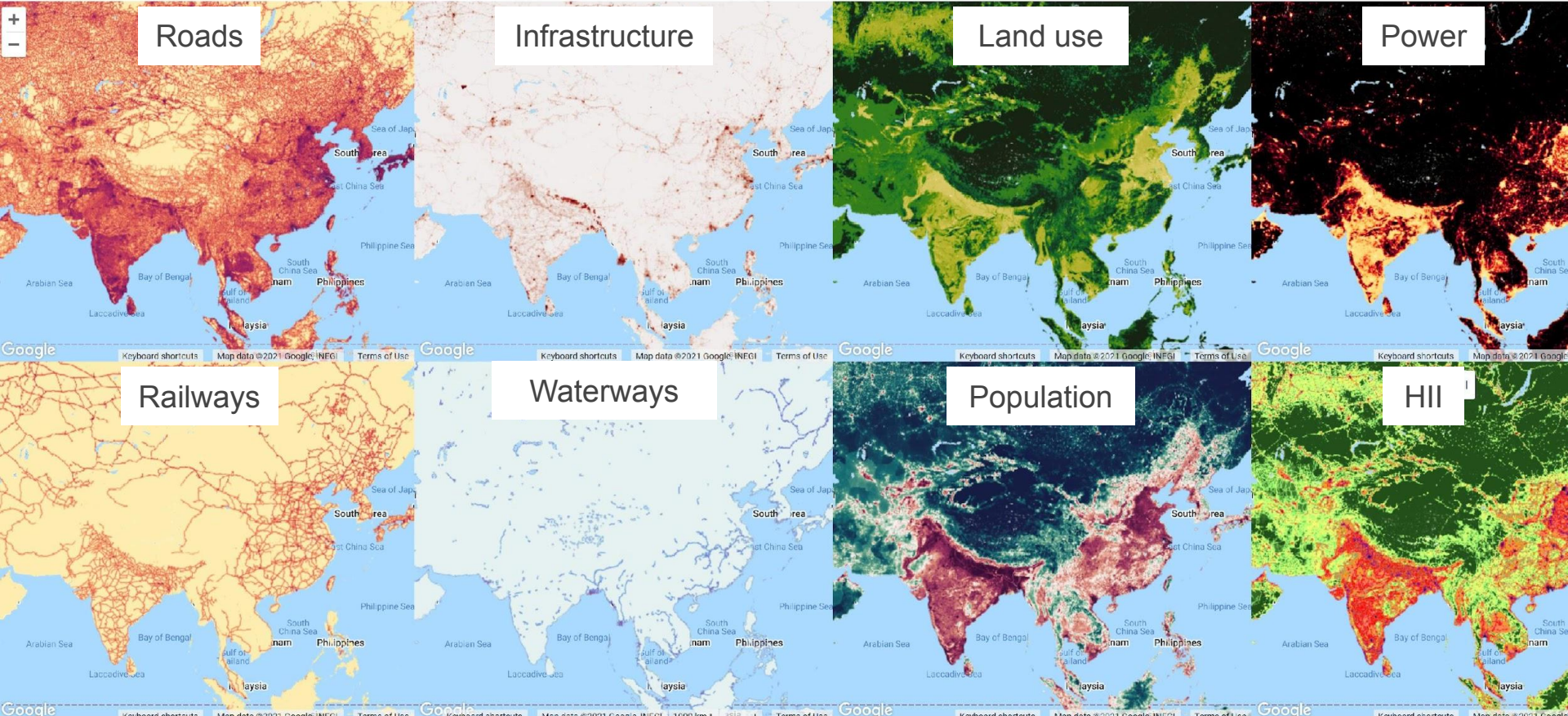


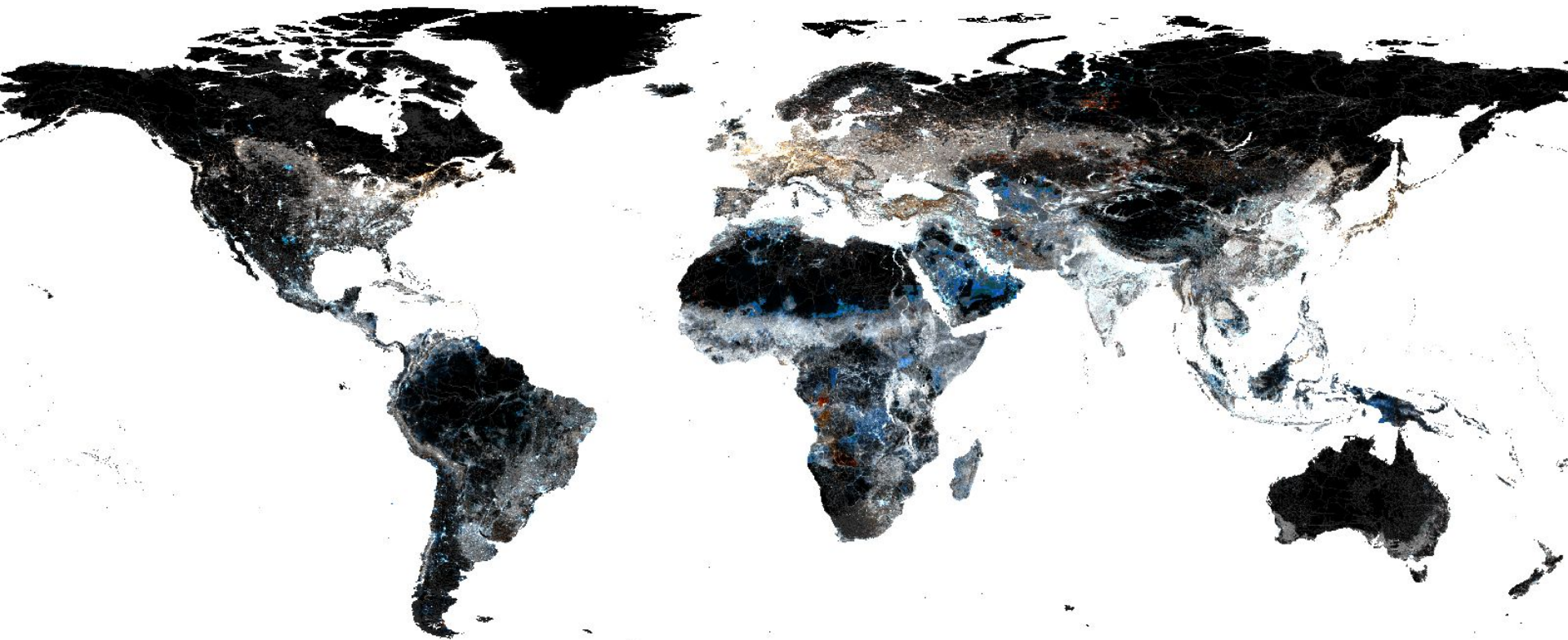




HII Driver Visualization

2020







# Model differences

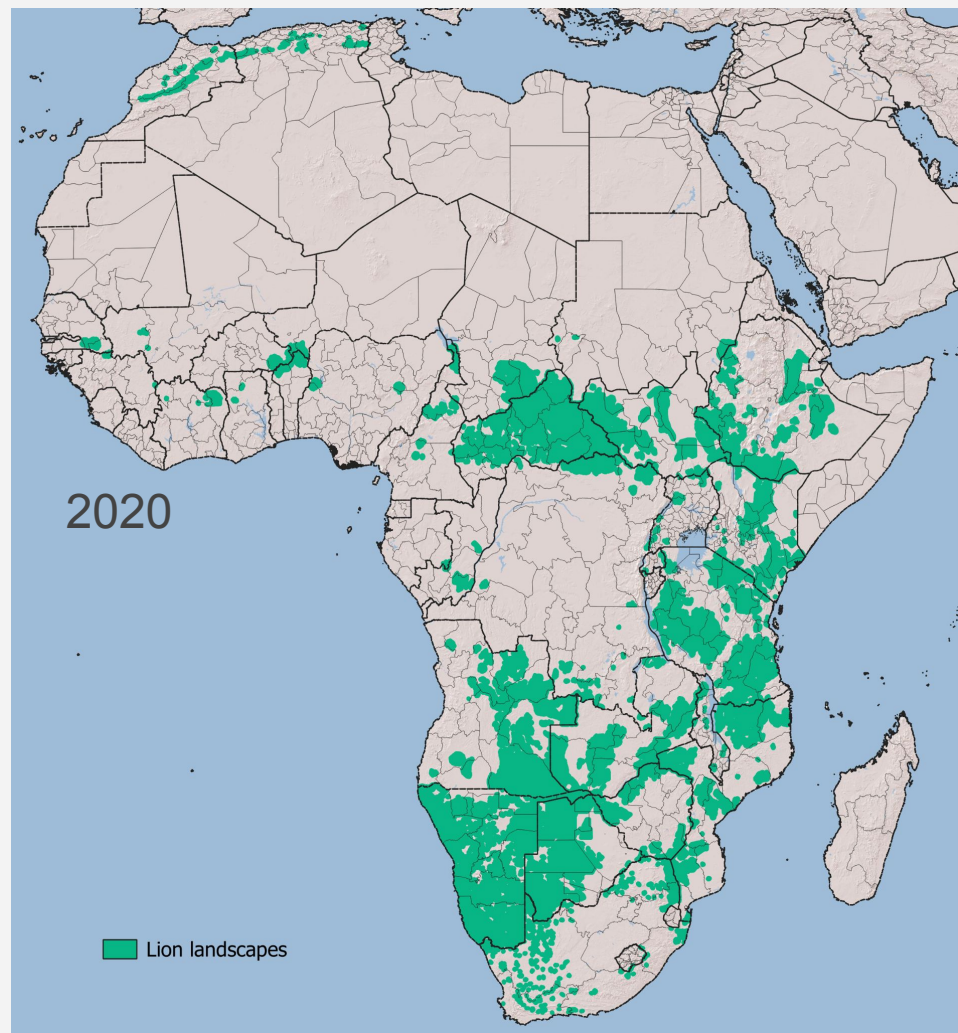
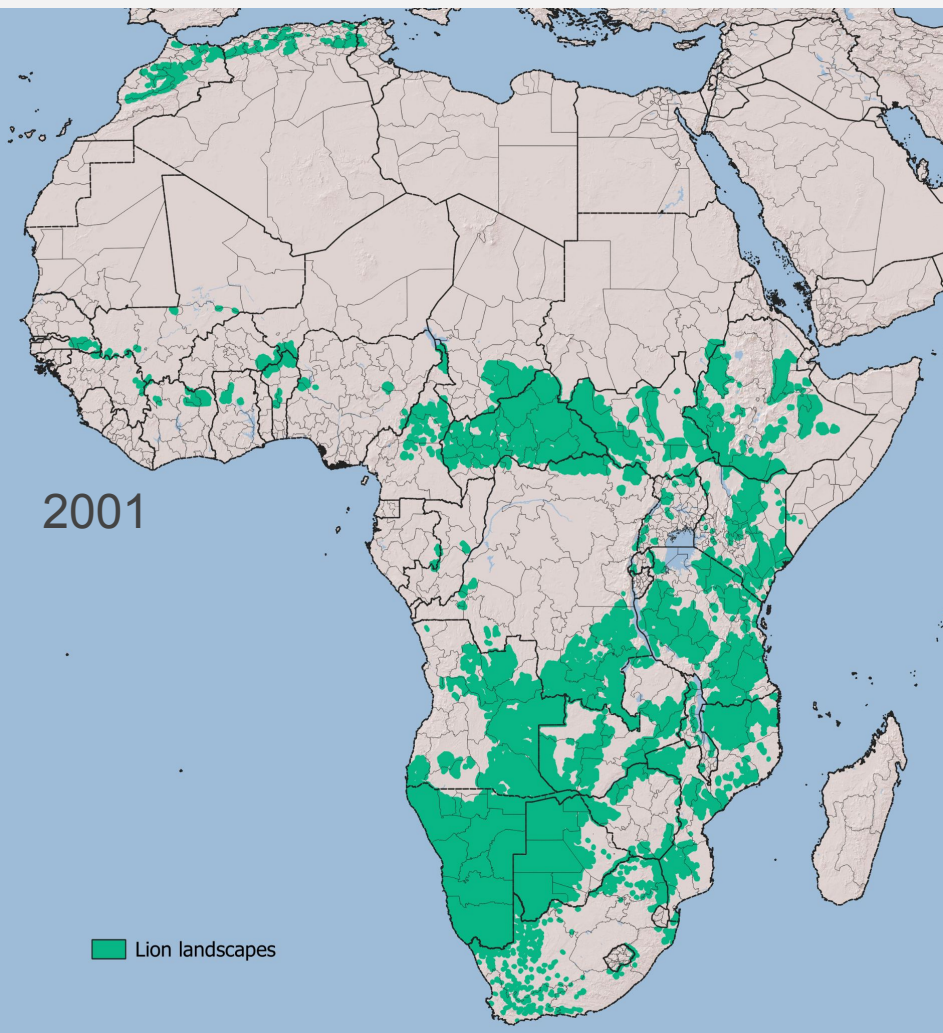
- Bison - only use grassland pixels to determine patch size, but allow forests to provide habitat and connectivity
  - Threshold ratio
- Jaguar - create a minimum patch size to include areas below a certain density
- Lion - treat protected areas separately













2001

Jaguar landscapes

2020

Jaguar landscapes



2020

Jaguar landscapes

2050

Jaguar landscapes





# End-user engagement

## Tigers:

Tiger Conservation Coalition is using these results to inform management and fundraising

TCL form part of the UNEP-WCMC Critical Habitat screening layer

TCL part of the SCoNe Coalition screening tool for carbon markets



# End-user engagement

## **Bison:**

Bison models to be utilized by IUCN Bison Specialist Group

Bison models presented to multiple potential users, including Parks Canada, American Prairie

Work to be presented at America's Grasslands meeting next month

## **Jaguar:**

Currently engaged with IUCN Cat Specialist Group (also for lions)

Jaguar models presented to World Bank Global Wildlife Program forum

## **Lion:**

Act Green models to be utilized by WCS country teams in quantifying changes in available habitat





# This is a collaborative effort

**PI:** Luke Hunter **Co-PI:** Dennis Jorgensen, Volker Radeloff, Christine Breitenmoser

**Technical team:** Gautam Surya, Jay Schoen, Dustin Sampson, Jamie Sanderlin, Charles Yackulic, Rachel Neugarten

**Advisors:** Rob Wallace, Tim Davenport, Urs Breitenmoser, María José Villanueva, Sarah Olimb, Dave Thau, Jon Paul Rodriguez, Glen Plumb, Franz Schug, Eduarda Silveira, Daniel Collette, Jonathan Palme, Steve Gallo, Kim Fisher

**Program:** Laura Rogers, Keith Gaddis, Woody Turner

**Formerly associated:** Eric Sanderson, Kim Fisher, Nathaniel Robinson, Haqiq Rahmani, Elizabeth Bennett

