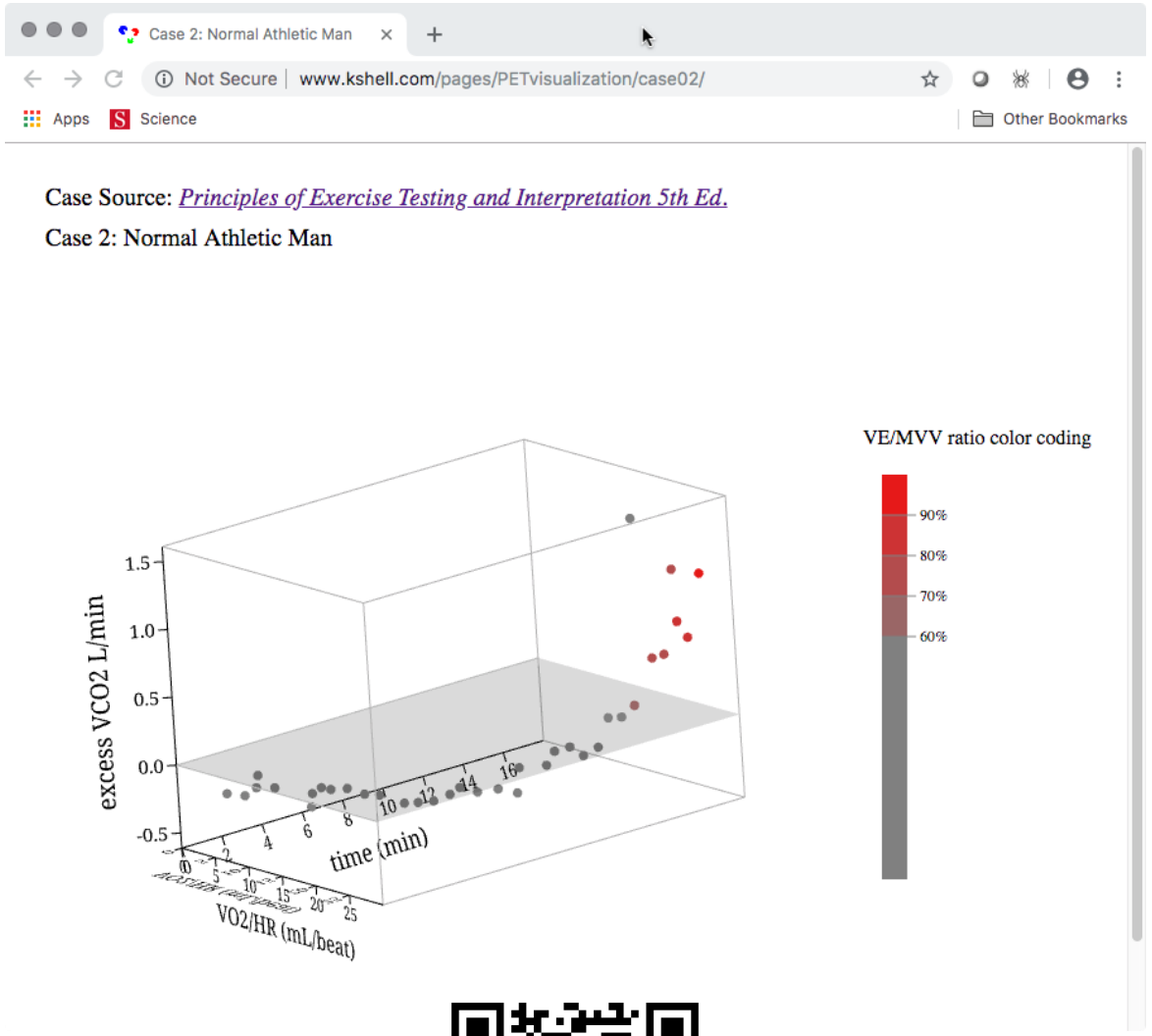
3D Charting of Clinical Data

Visualization of CPET Measurements

- 3D rendering based on an open international standard
- Archivability
- Royalty-free use, publication, and distribution.
- Usable across platforms, including mobile and over web with standard browsers, without need for plugins.



http://www.kshell.com/pages/PETvisualization/case02/

3D Charting Challenges

- Need measurement data in computer readable form
  - Coordination with instrumentation suppliers
  - Clear semantics on numerical representation and measurement units
  - Clear representation of multivalue time series; including representation of missing values
  - Secure association of measurement data with patient identification, test paramteters, and additional clinical patient-specific measurements.
  - The HL7 THEMES project (*Terminology Harmonization in Exercise Medicine and Exercise Science* Domain Analysis Model) is an information/activity modeling approach to opening up measurement results.
  - Need sources of HL7 compliant exercise testing data for evaluation and prototyping

Workflow Challenge

- Need to identify and deploy tools and a workflow that will allow clinical experience and expertise to be applied to 3D charting of test measurements
- Potential tools include
  - General purpose ”notebook” style environments (ex: Jupyter) which allow data charting using scripting languages (Python, Javascript)
  - Computer applications based on open-source code developed specifically for charting clinical measurements.
  - Plugin style extensions to existing COTS software