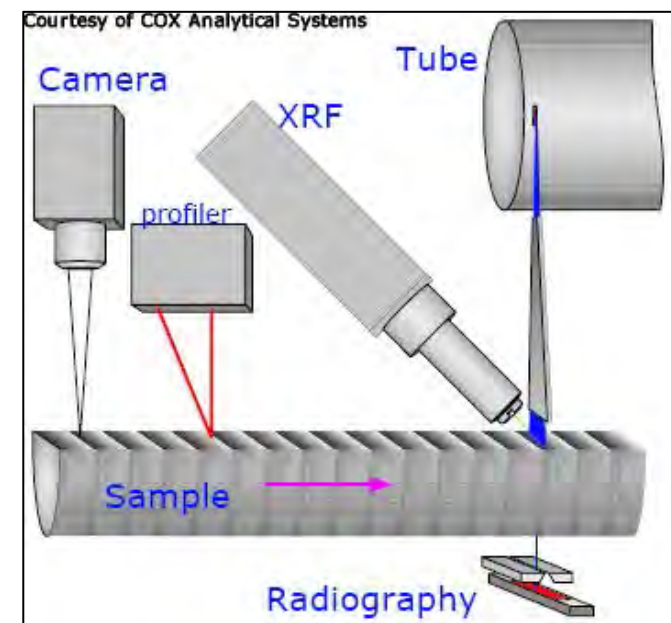


X-ray microfluorescence, microradiography and tomodensitometry provide a broader view of the archaeological space



MULTIDISCIPLINARY LABORATORY OF CT-SCAN FOR NON-MEDICAL USE
This laboratory allows for non-destructive measurements of the internal density variations on static body (internal structure, porosity, etc.) or dynamic phenomena, mainly hydrodynamic (experiment in 4D). It is the only facility of its kind in a canadian university.



The ITRAX™ Core scanner was developed by Cox Analytical Systems. The principle of operation is based on the simultaneous acquisition of microdensity (radiography) and microcompositional variations (XRF) using two separate X-ray detection systems. Moreover, colour information and magnetic susceptibility are provided through respectively a high resolution digital line-scanning camera and a magnetic susceptibility sensor incorporated in the system. The analysis is performed without touching the sample surface and is completely non-destructive.

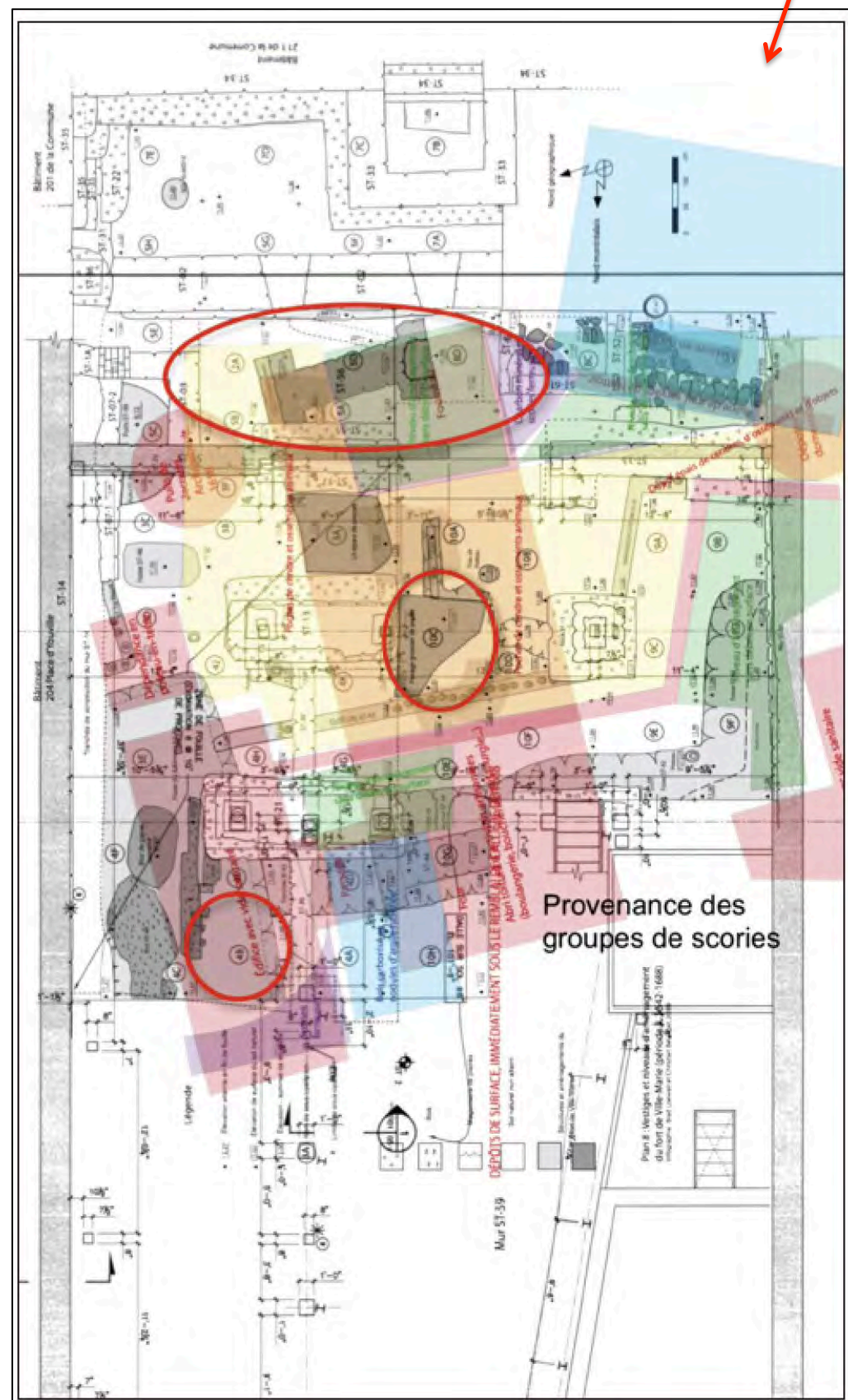
Characterization of archaeological soils

Loyola Site, Guyane



Cimenterie and Blacksmith Shop

Fort Ville Marie, Montreal



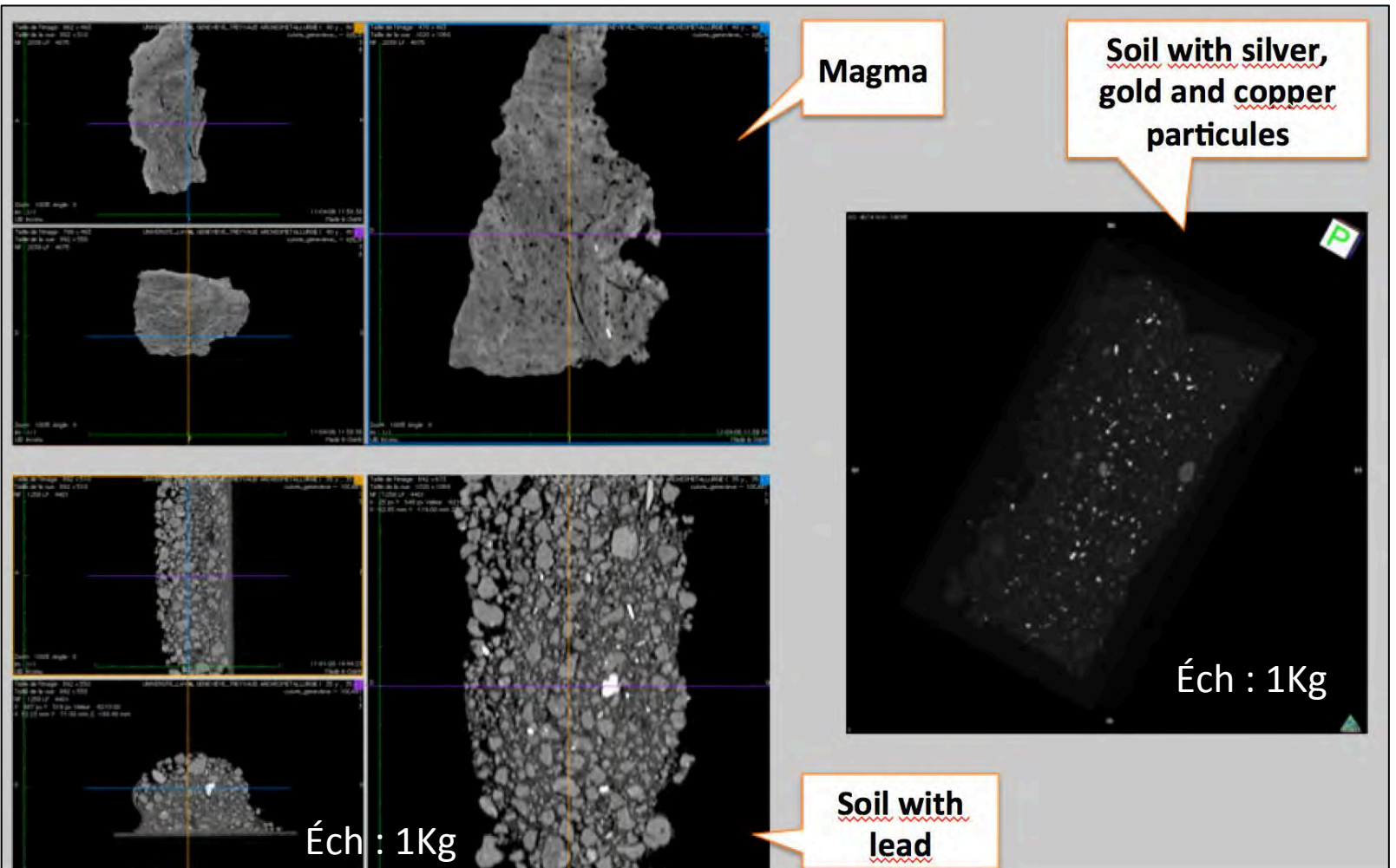
Box sample: 1cm X2 cm ITRAX



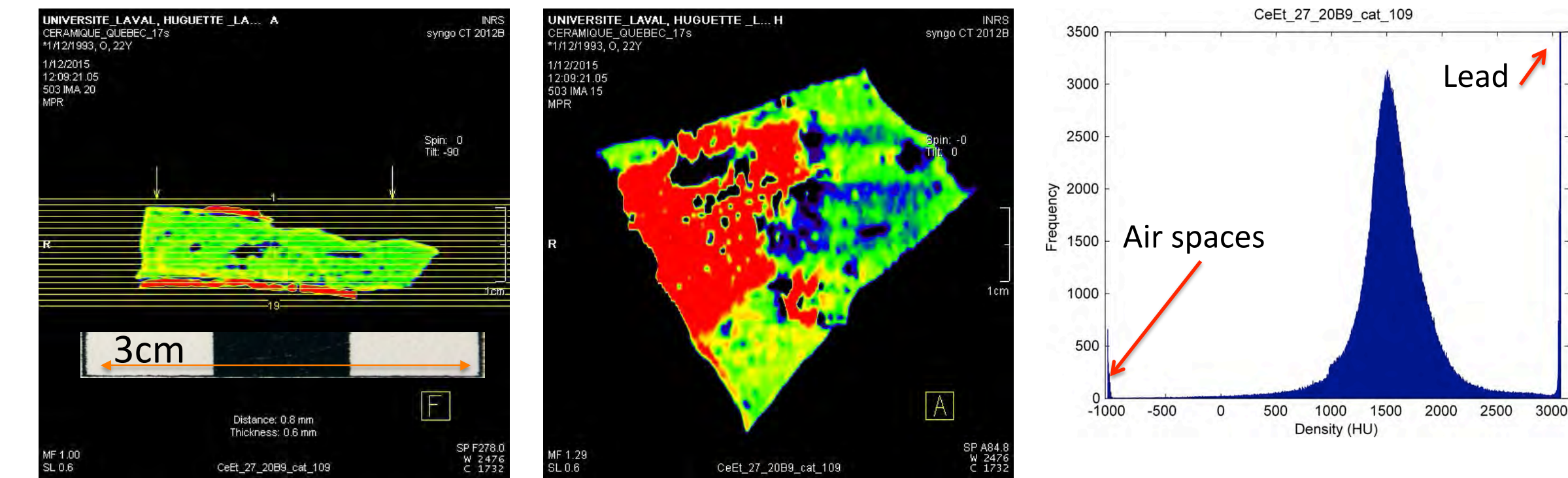
- Characterize the chemical elements from the **decomposition** of human body: Calcium, Selenium, Phosphore, Potassium, Sulfur, Copper Magnesium, Zinc, lead
- Localize burials and cemetery
- Identification of types of occupations by chemical elements in archaeological soils, kitchen, dump, artisan workshops, etc ...
- Land management and physical **perturbation** on soil
- Non-destructive samples analysis/ objects integrity

CTScan

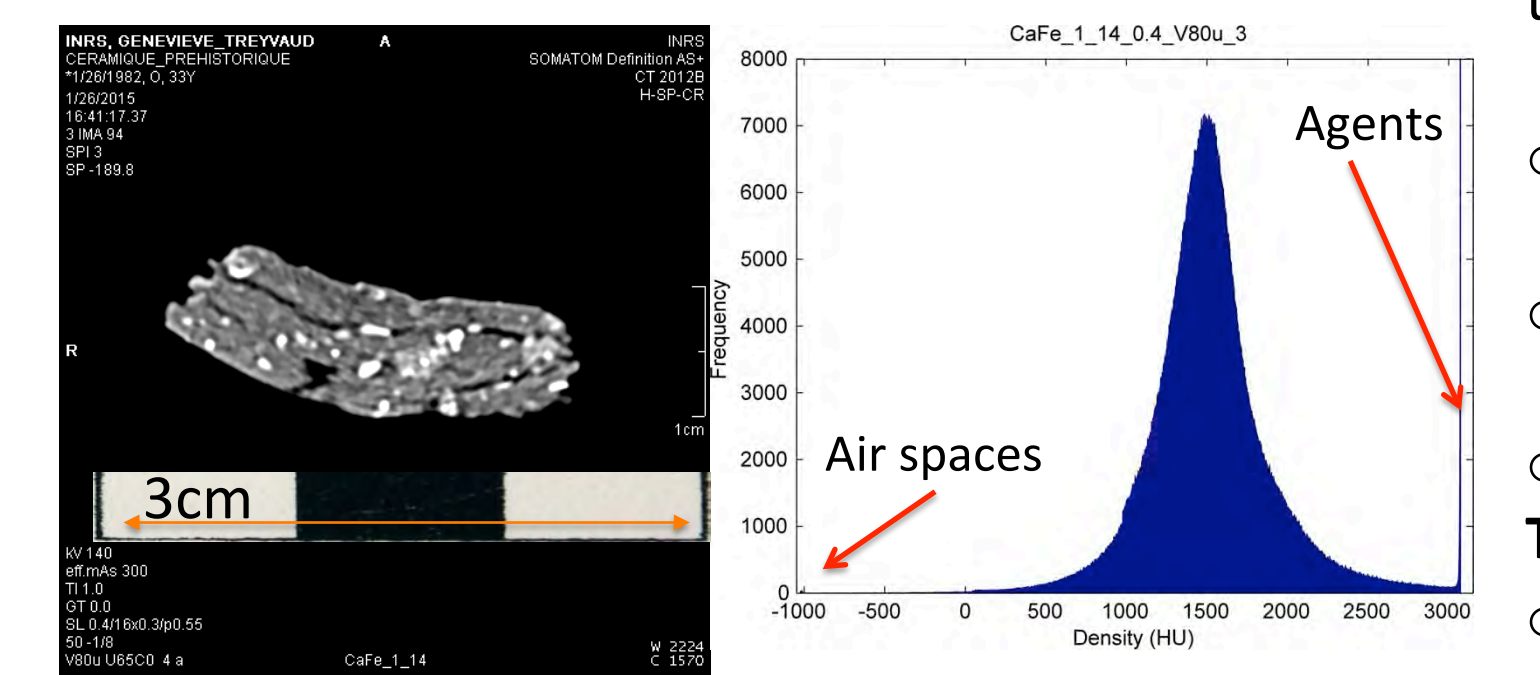
- Characterization of materials with density index; type of raw material, sources of raw material, materials preparation, comparison between sites of raw materials used
- Use in **many areas** of research in archeology
- Image **cuts** and **3D reconstruction**
- Survey and **inventory** of samples with core sampling, archaeological
- Stratigraphy and **soils definition** further to human occupation
- Non-destructive samples analysis/ objects integrity
- Land management and physical **perturbation** on soil



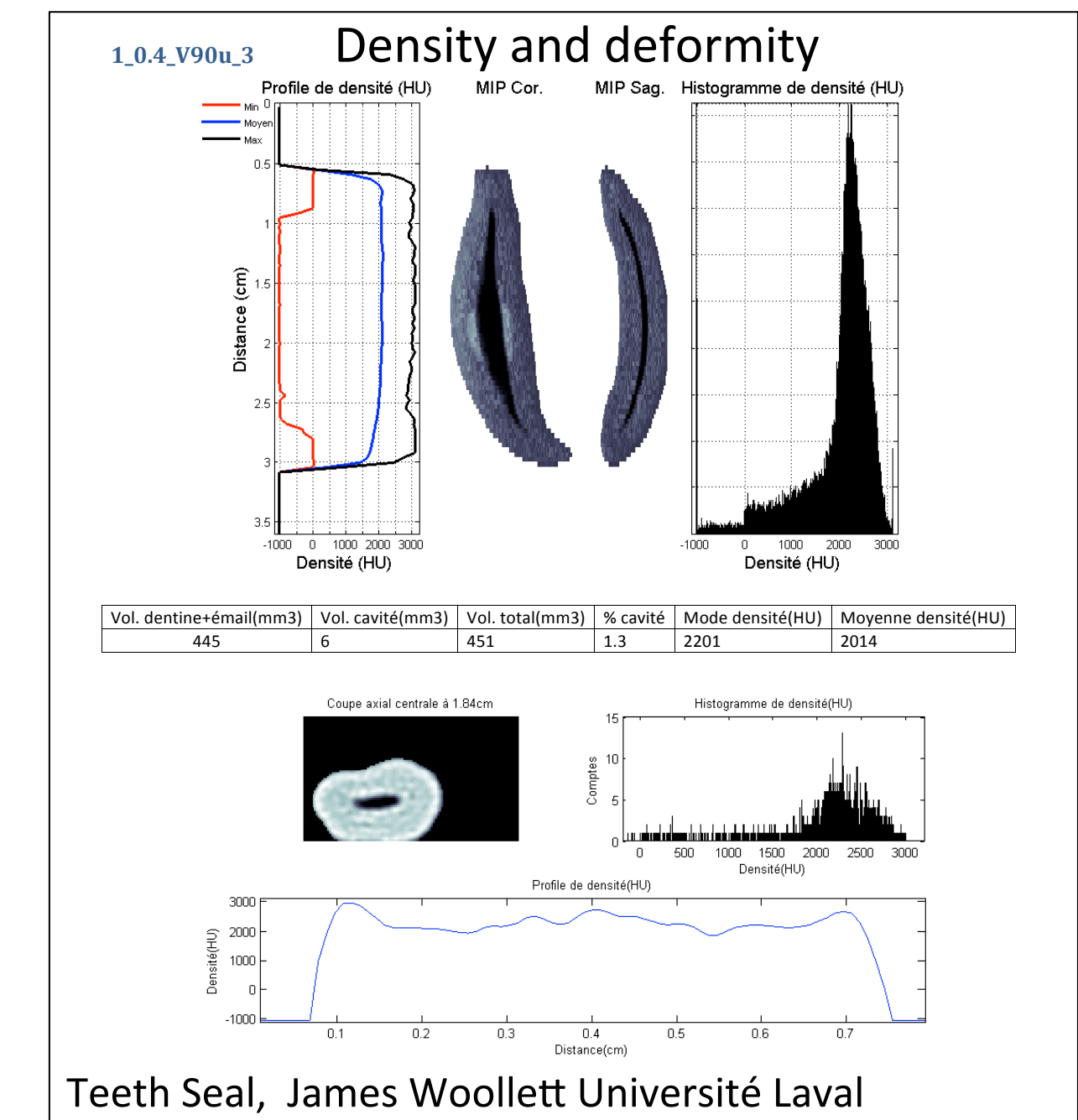
Chemical and physical characterization of old materials with ITRAX and the CT scan



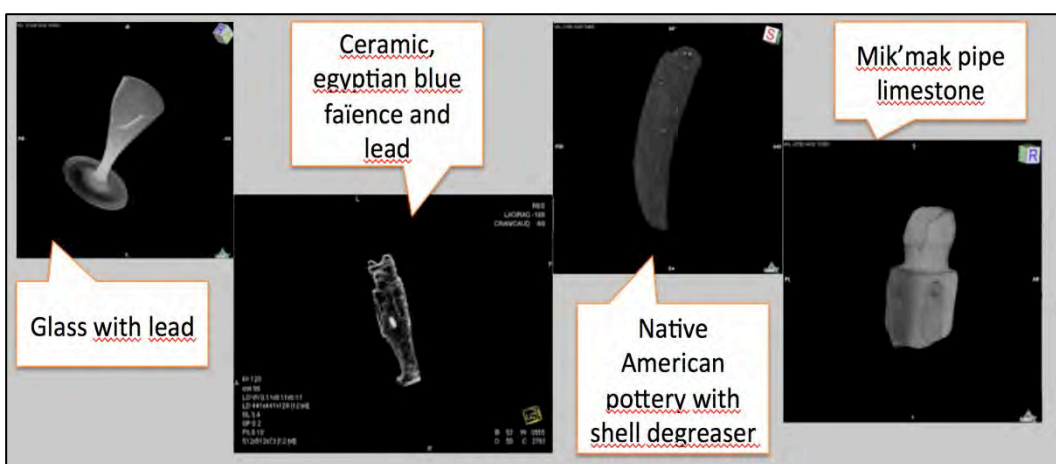
Ceramic shard with lead glaze



Prehistoric ceramic shard



- Identification of **pottery** types on the basis of **tempering agents**
- Characterization of **raw materiel**
- Identification and proportions of **inclusions and air spaces**
- Identification of **manufacturing Techniques**
- Density of **ceramic paste and other materials**



Example: Site EIfT-24 lac Arques « La cache » Storage and survival box on the Cree historical site

