Crystal Data: Monoclinic. *Point Group*: *m*. Crystals display a series of $\{1 \ k1\}$ forms as angled, wedgelike terminations on prisms or blades elongated along [001] and sometimes flattened on $\{010\}$, to ~0.5 mm. Typically in sprays or randomly scattered individuals or in parallel.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Irregular. Hardness = 2.5 D(meas.) = 2.87(2) D(calc.) = 2.912 Bright cyan fluorescence under 365 nm UV. Easily soluble in H₂O.

Optical Properties: Transparent. *Color*: Pale green-yellow. *Streak*: White. *Luster*: Vitreous. *Optical Class*: Biaxial (+). $\alpha = 1.493(1)$ $\beta = 1.505(1)$ $\gamma = 1.518(1)$ 2Vmeas. = 88(1)° 2V(calc). = 88.4° *Orientation*: X = b, $Z \land a = 44°$ in obtuse β . *Dispersion*: r > v, moderate. *Pleochroism*: X = colorless, Y and Z = green-yellow. *Absorption*: $X < Y \approx Z$.

Cell Data: Space Group: Cc. a = 9.3134(4) b = 28.750(1) c = 9.6346(7) $\beta = 93.442(7)^{\circ}$ Z = 4

X-Ray Diffraction Pattern: Blue Lizard mine, San Juan Co., Utah, USA. 4.814 (100), 6.69 (95), 3.461 (83), 2.955 (81), 2.882 (74), 5.75 (68), 8.00 (63)

Chemistry:		(1)	(2)
-	Na ₂ O	24.83	27.42
	Na ₂ O	[28.31]	
	UO_3	25.79	25.31
	SO_3	43.89	42.50
	<u>H2</u> O	[5.00]	4.78
	Total	102.99	100.00

(1) Blue Lizard mine, San Juan Co., Utah, USA; average electron microprobe analysis; H₂O and Na₂O calculated from stoichiometry; corresponds to $Na_{10}(U_{0.99}O_2)(S_{1.00}O_4)_6$ · 3H₂O (+0.06 H for charge balance). (2) $Na_{10}[(UO_2)(SO_4)_4](SO_4)_2(H_2O)_3$.

Occurrence: Post-mining, secondary, as efflorescent crusts on the surfaces of mine walls from the oxidation of primary uranium ores in a humid underground environment.

Association: Belakovskiite, ferrinatrite, halite, ivsite, metavoltine, thénardite.

Distribution: From the Blue Lizard mine, Red Canyon, White Canyon mining district, San Juan Co., Utah, USA.

Name: Honors Canadian mineralogist Aaron J. *Lussier* (b. 1980), Research Scientist, Canadian Museum of Nature, whose articles advanced our understanding of actinide mineralogy and crystal chemistry, and who is senior author of a comprehensive review of uranyl compounds' structures.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (73518 holotype, 73519, and 73520 cotypes).

References: (1) Kampf, A.R., T.A. Olds, J. Plášil, B.P. Nash, and J. Marty (2019) Lussierite, a new sodium uranyl sulfate mineral with bidentate UO₇-SO₄ linkage from the Blue Lizard mine, San Juan County, Utah, USA. Mineral. Mag., 83, 799-808.