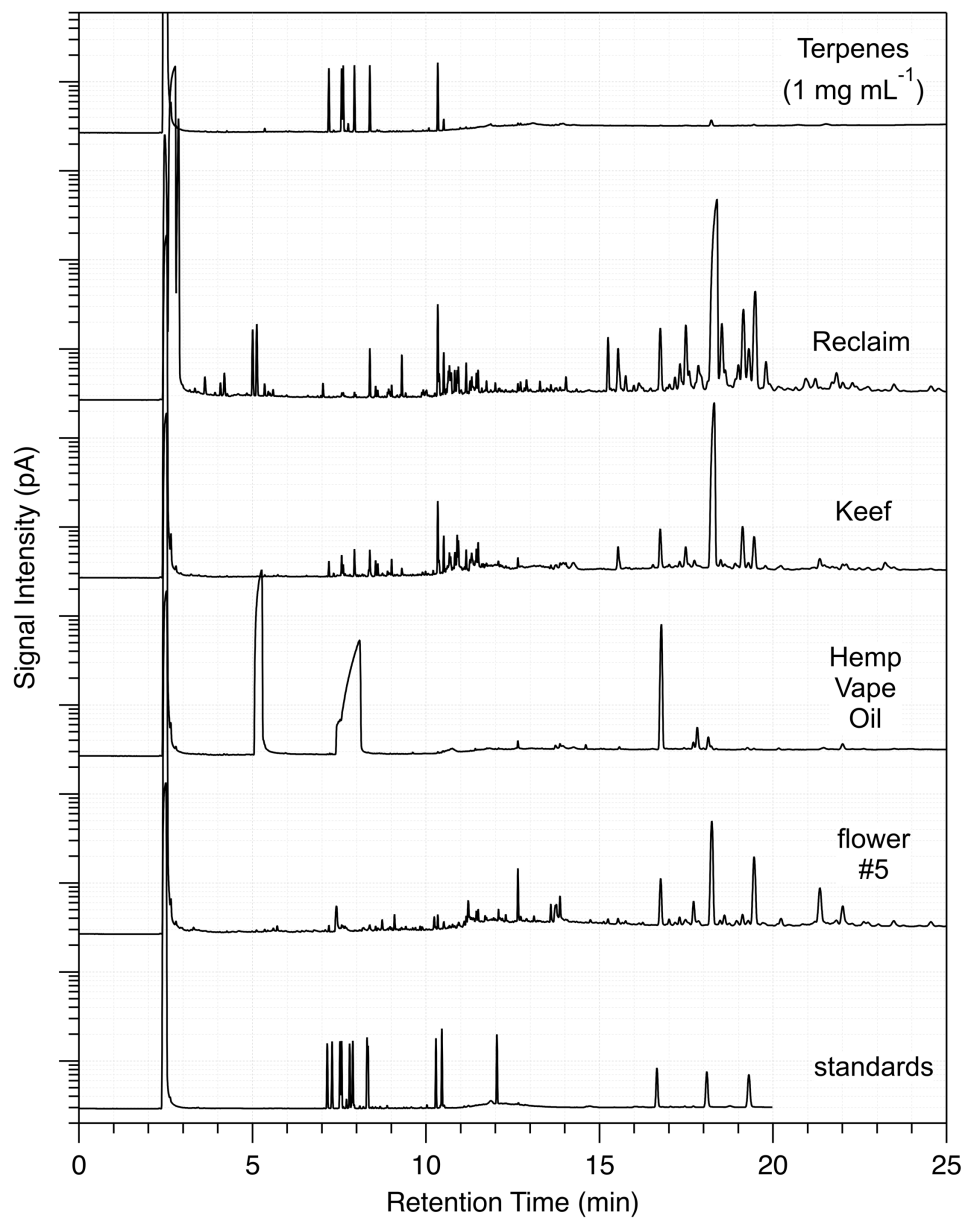


# Analysis of Various Cannabinoid Containing Materials

## A Gas Chromatographic Investigation

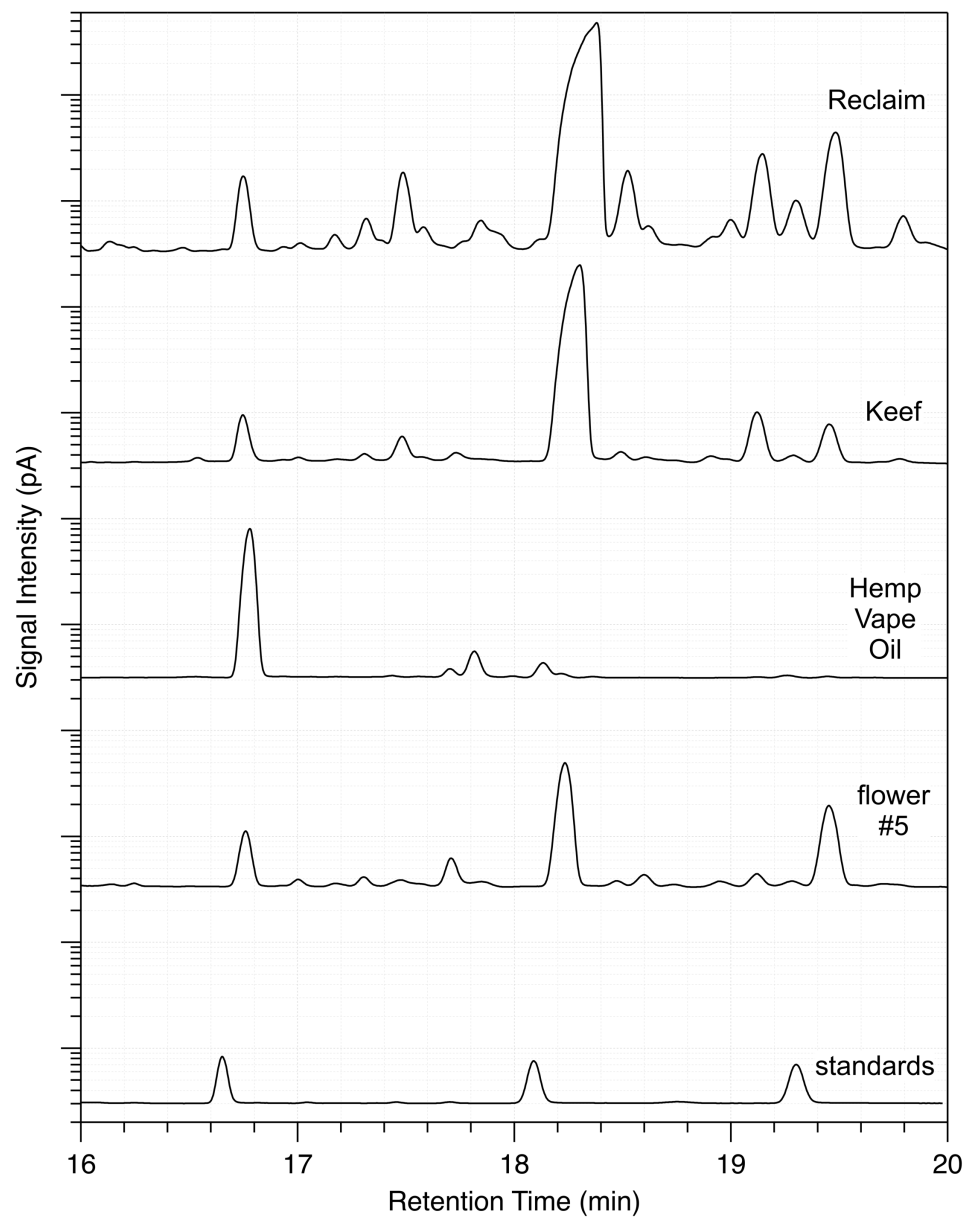
Joseph DiVerdi  
Department of Chemistry  
Colorado State University  
Fort Collins, CO USA  
February 2024

# Full Chromatograms of all Samples

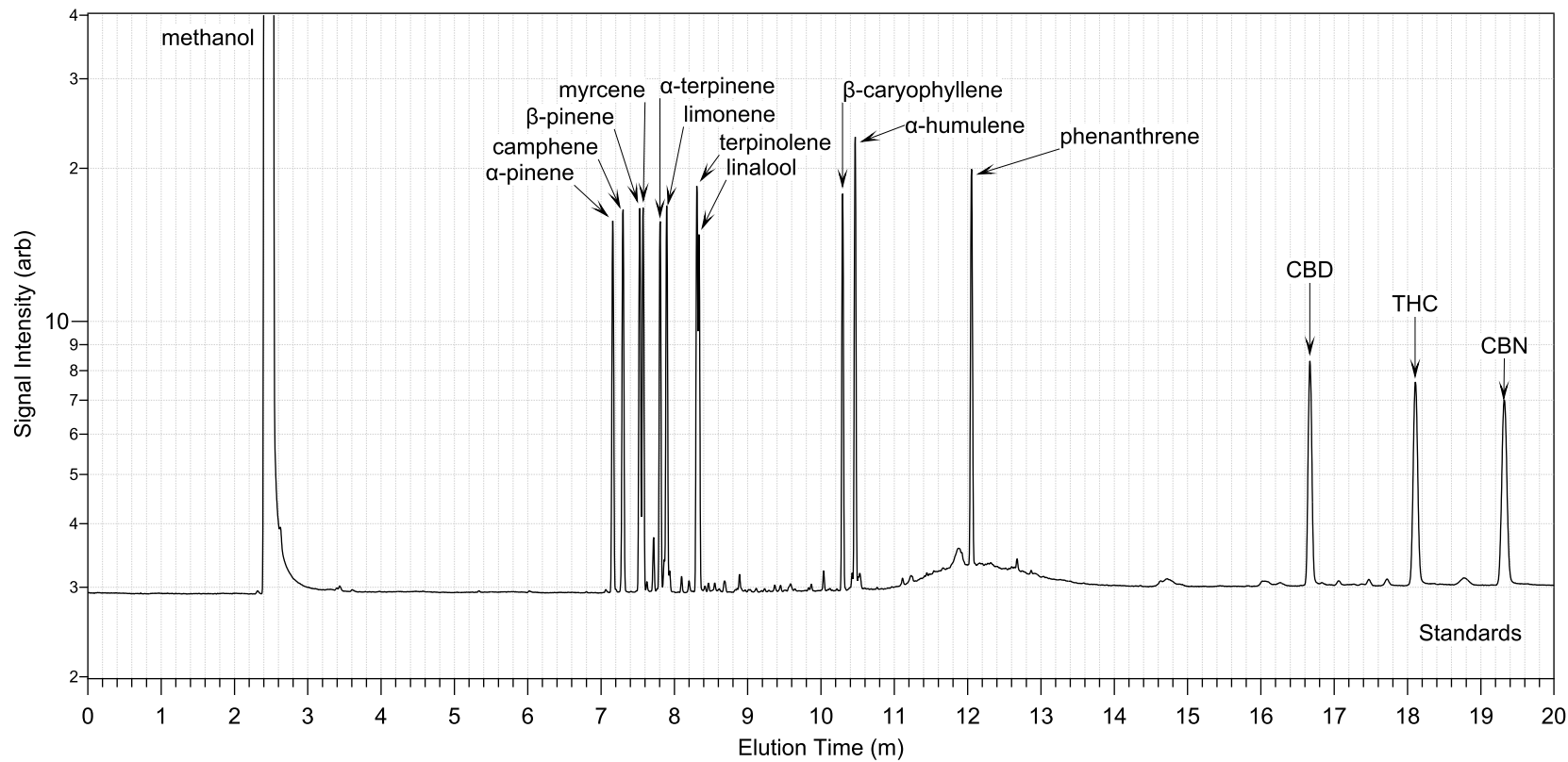


# Expanded Cannabinoid Region

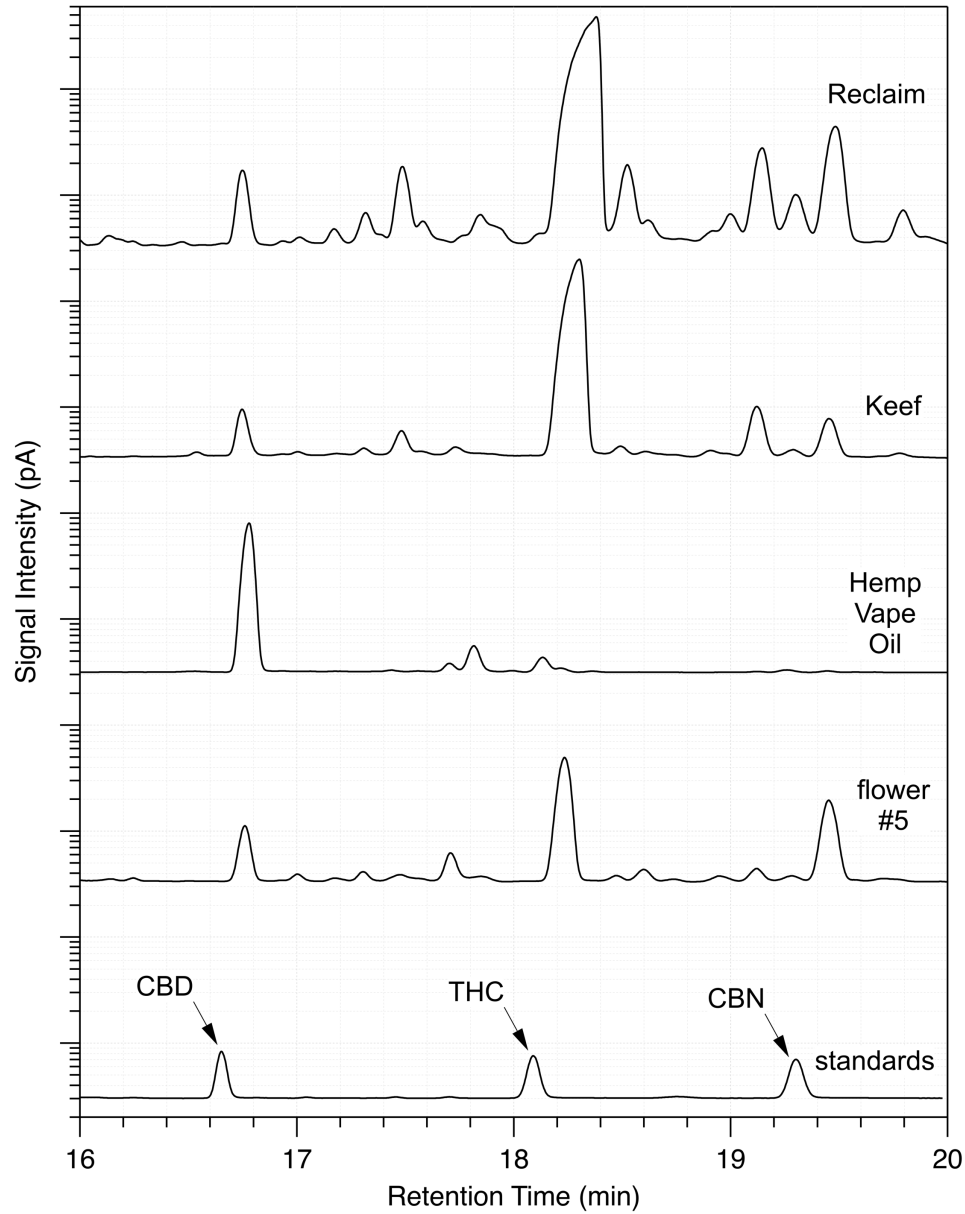
---



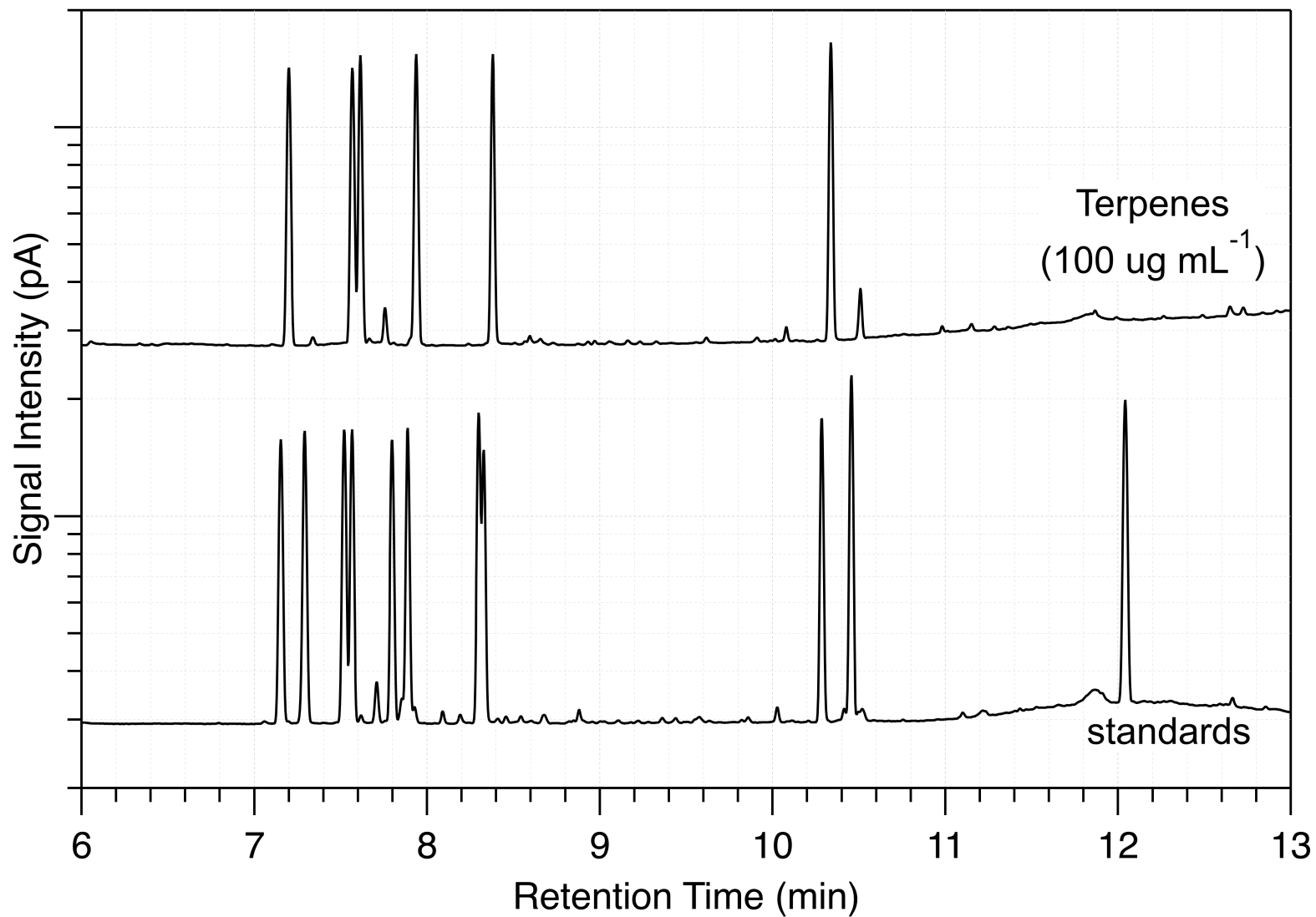
# The Need for Good Annotation



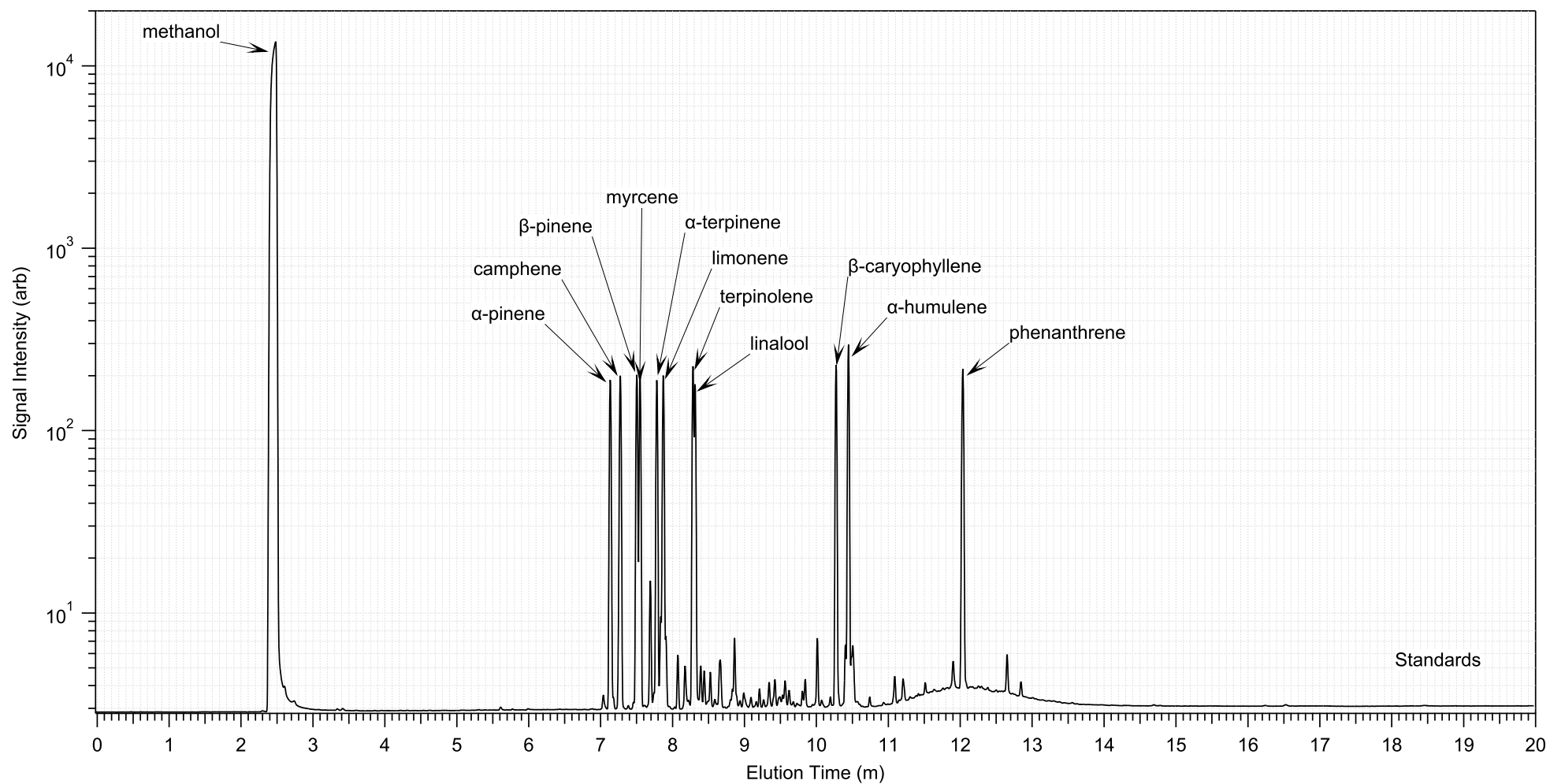
# Now We Can Analyze



# Expanded Terpene Region

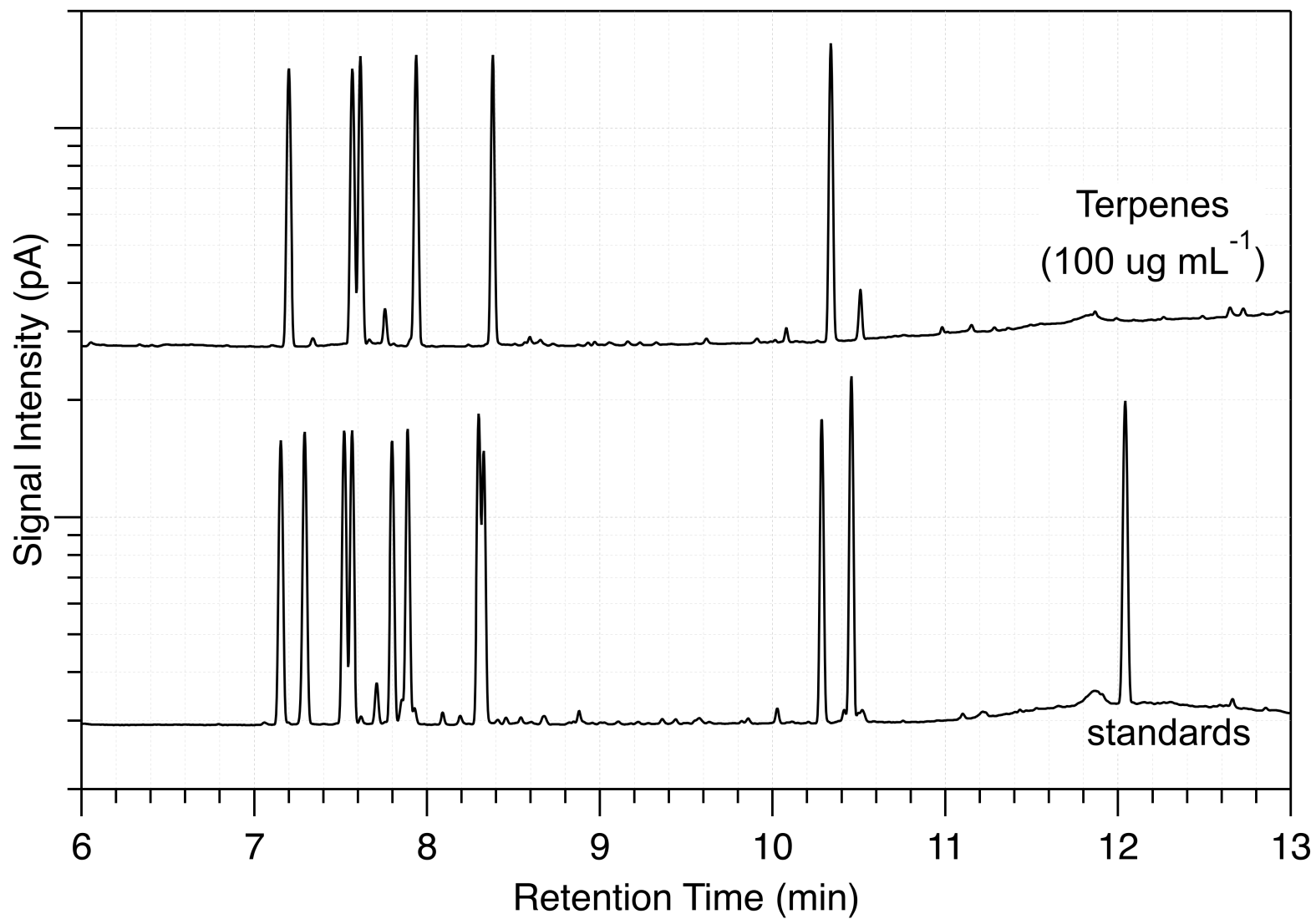


# More Annotation



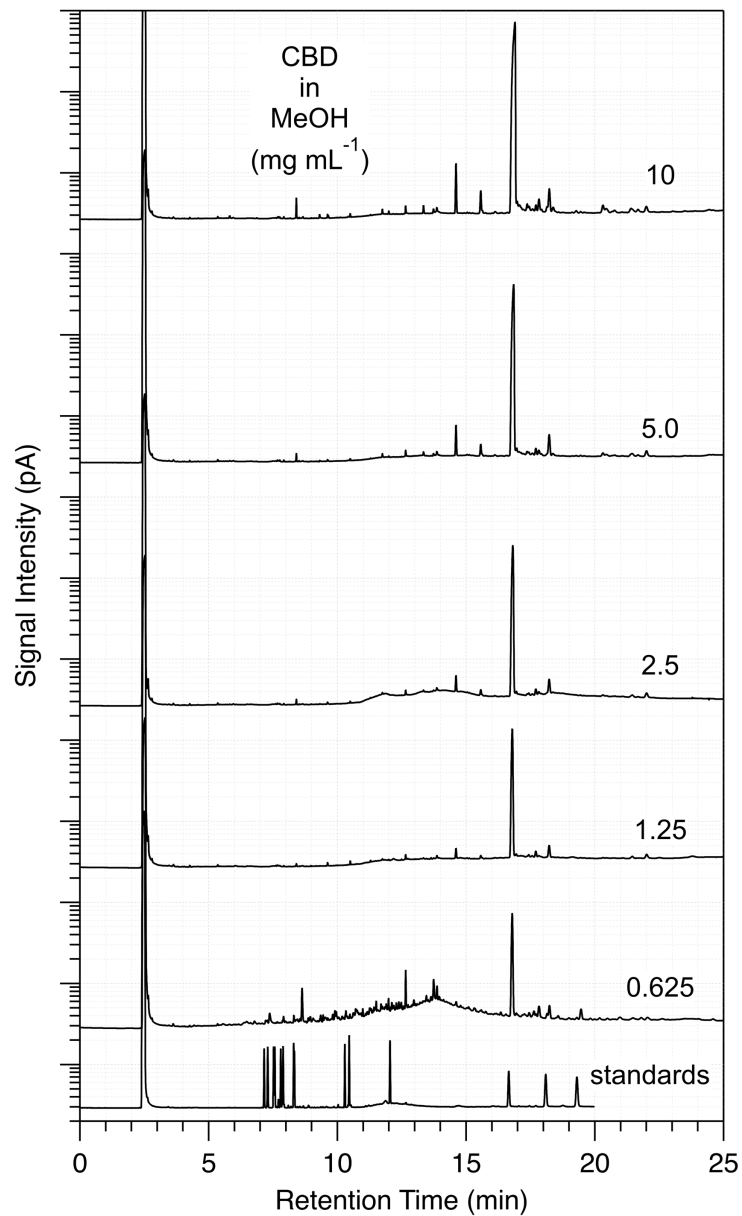
# To Be Performed

---

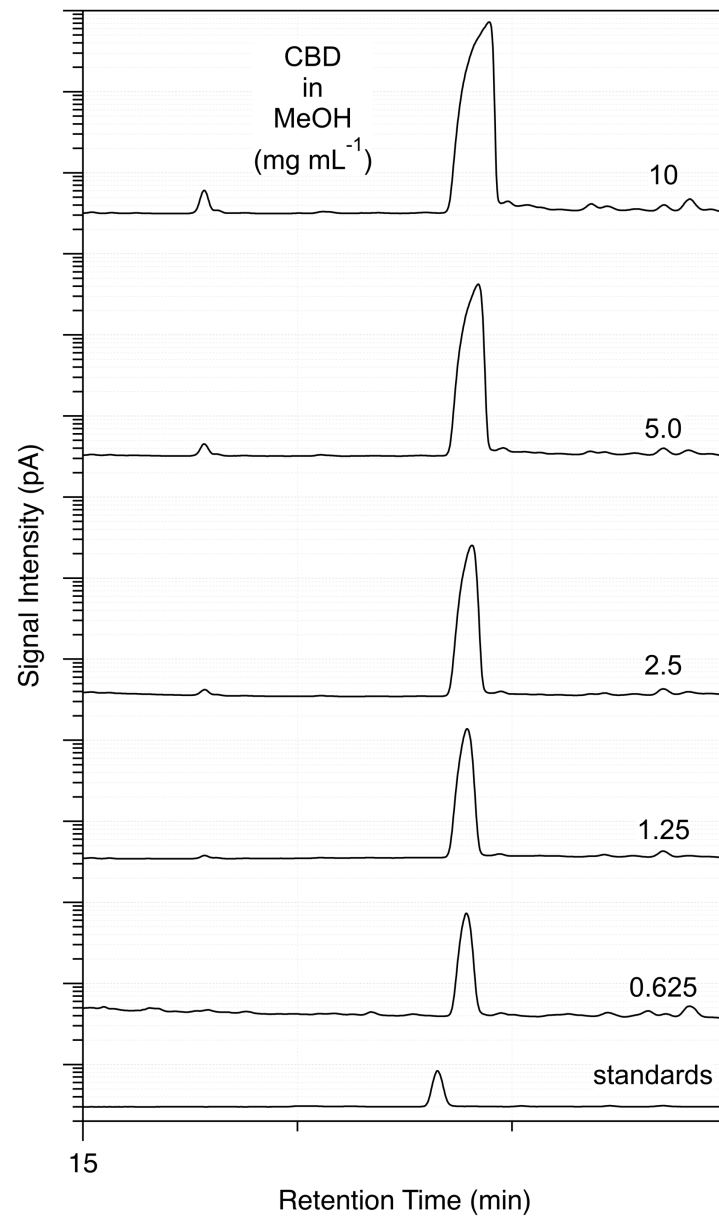




# CBD Concentration Raw Data



# CBD Region Expanded



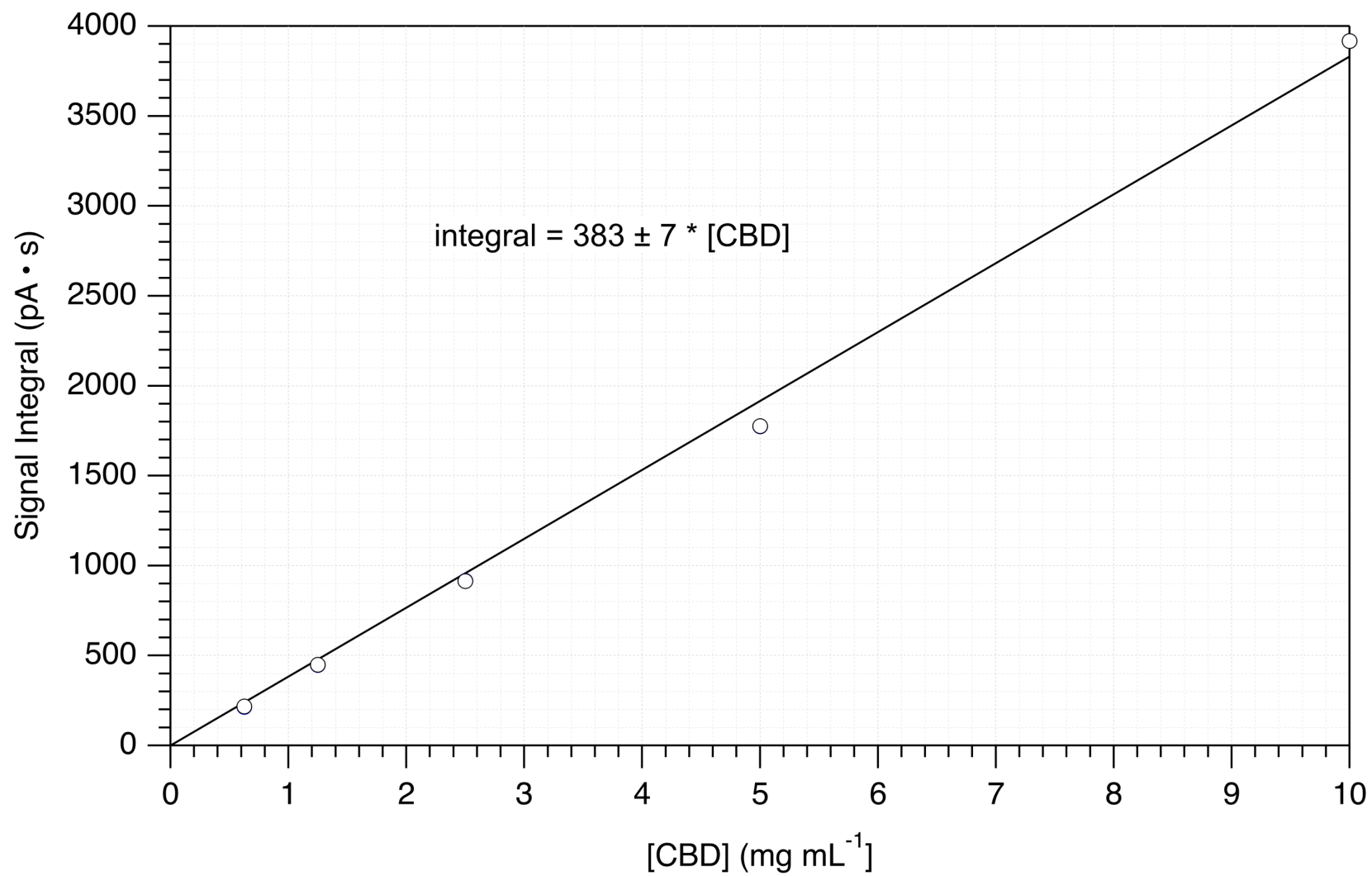
# Agilent – Igor Comparison & Conversion

---

CBD_conc	CBD_integral_agilent	CBD_integral_igor
0.625	217	214
1.250	449	447
2.500	914	915
5.000	1775	1775
10.000	3917	3917

- Label left "Agilent Signal In
- `CBD_integral_igor *= 60`
- `ModifyTable format(CBD_integr`
- `RemoveFromGraph CBD_integral_`

# “Beers Law”



# Igor Analysis Results

---

```
•K0 = 0;
•CurveFit/X=1/H="10" line CBD_integral_agilent /X=CBD_conc /D
  fit_CBD_integral_agilent= W_coef[0]+W_coef[1]*x
  W_coef={0,383.08}
  V_chisq= 30446.2;V_npnts= 5;V_numNaNs= 0;V_numINFs= 0;
  V_startRow= 0;V_endRow= 4;V_q= 1;V_Rab= 0;V_Pr= 0.998882;
  V_r2= 0.948115;
  W_sigma={0,7.56}
  Coefficient values ± one standard deviation
  a   = 0 ± 0
  b   = 383.08 ± 7.56
```

# Acknowledgements

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Thanks to the students of CHEM 442 (Spring 2024)  
For Experimental Assistance