



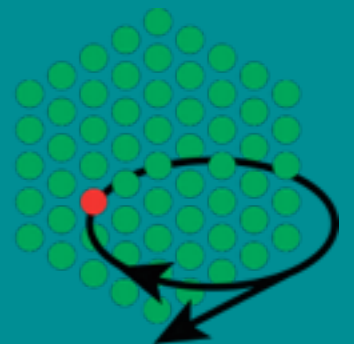
Ligand building with ARP/wARP

Hands-on Tutorial

Joana Pereira
Tim Wiegels

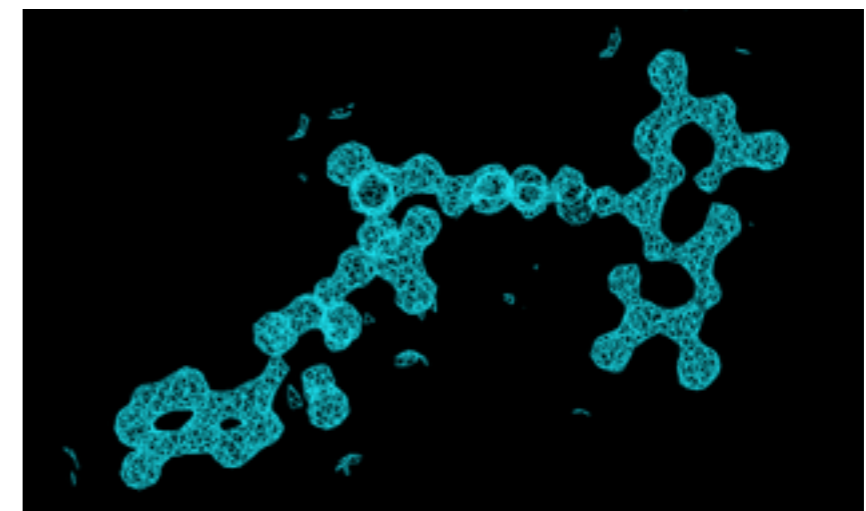
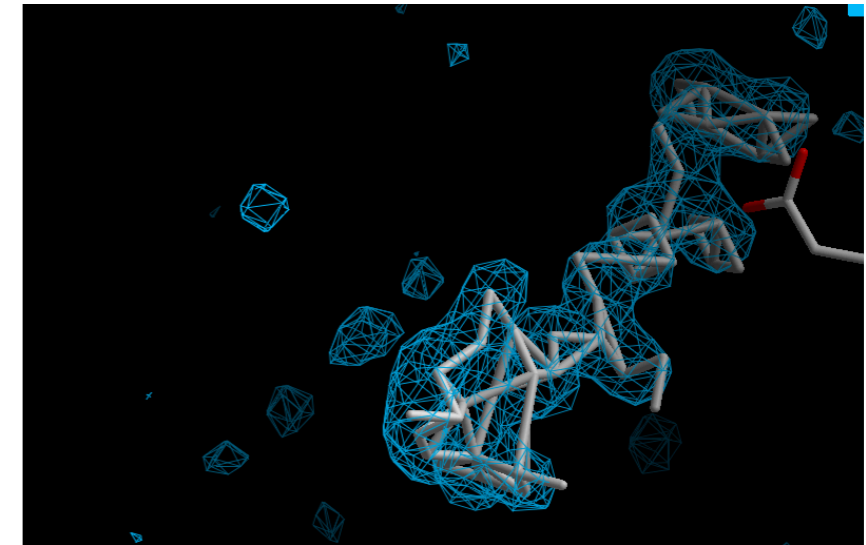
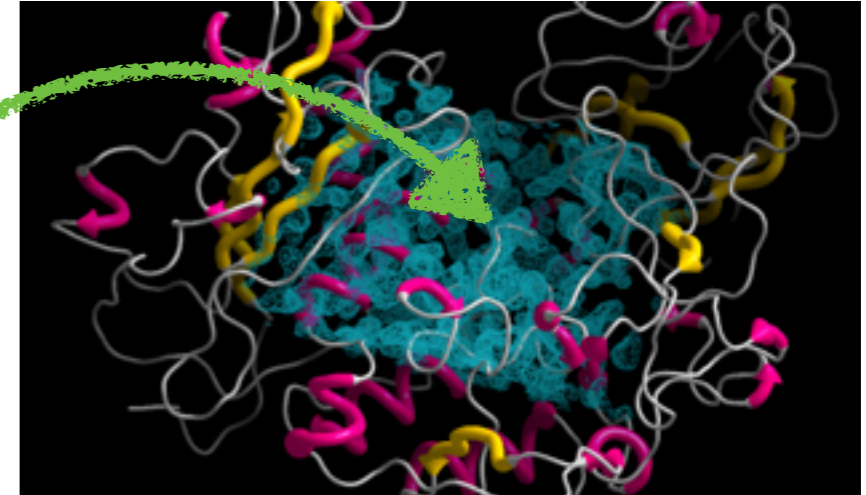
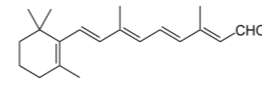
Lamzin Group, EMBL Hamburg

EMBL



What will you learn?

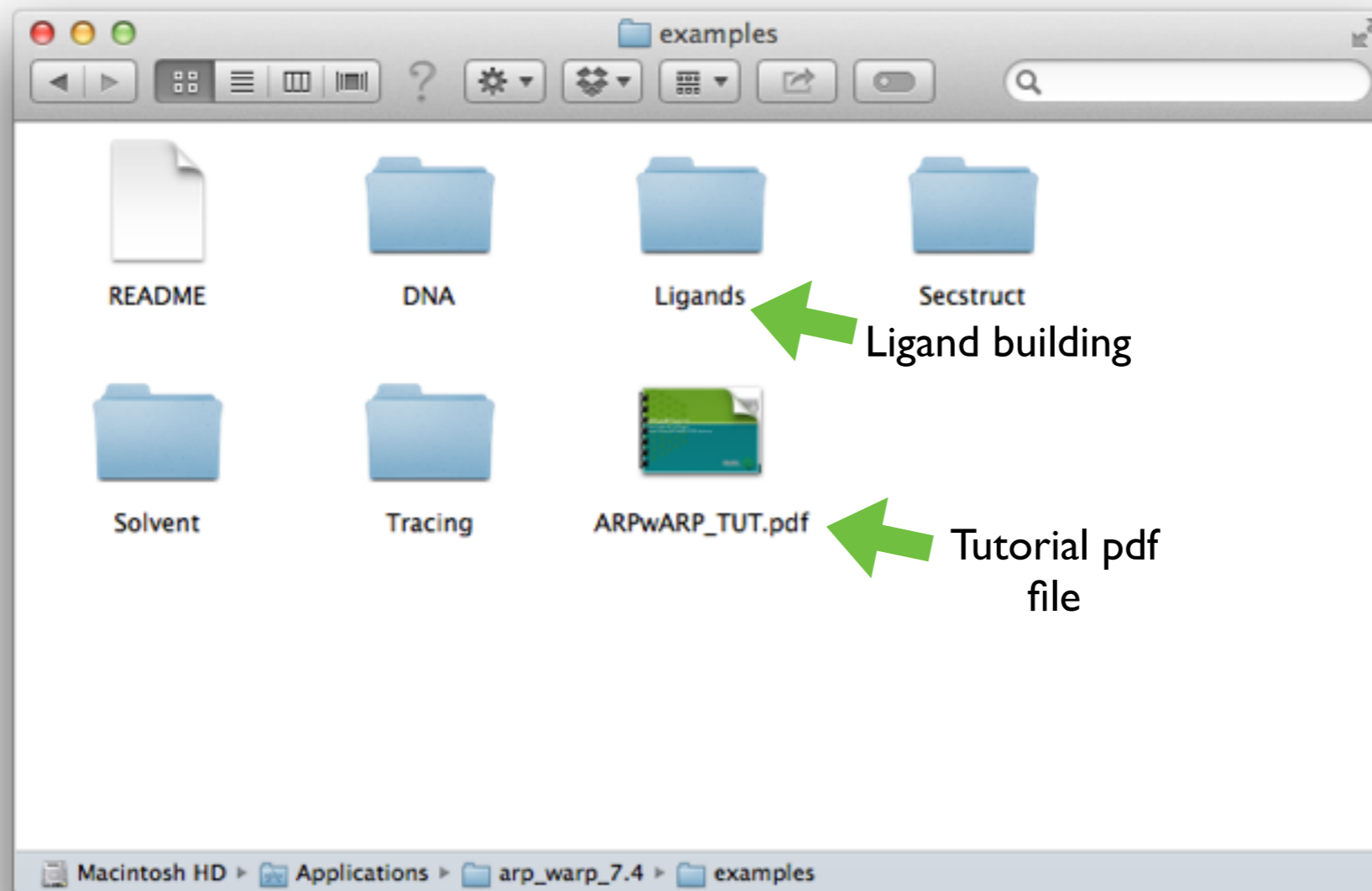
- 1 Fit a ligand into the electron density
- 2 Identify a ligand binding site on the electron density
- 3 Identify a ligand on the electron density



What do you need?

Example data:

Applications → arp/warp_7.4 → examples



What do you need?

- MTZ file (e.g, lcbs.mtz)
- Difference map (e.g., lCBS_noligand_diff.map)
- APO structure (e.g., lCBS_noligand.pdb)
- Ligand template (e.g., RETINOICACID.pdb)



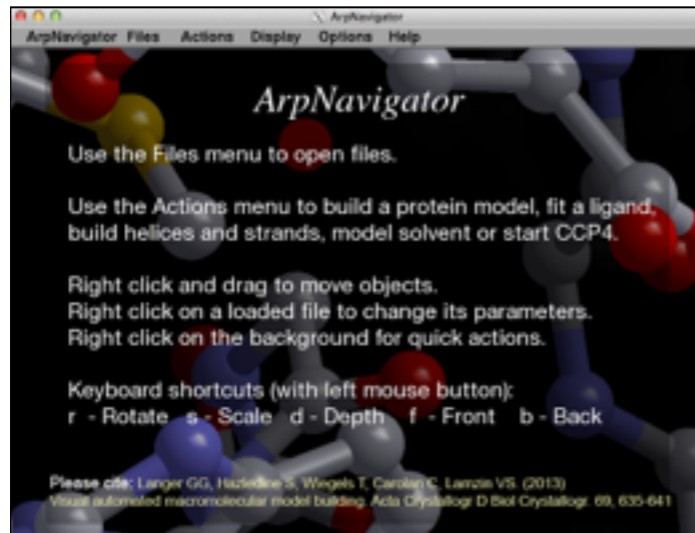
One of these



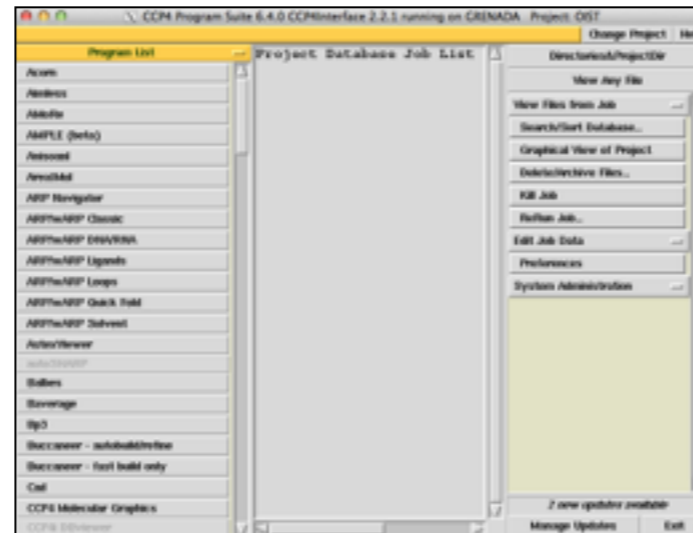
Not for ligand
identification

How to start it?

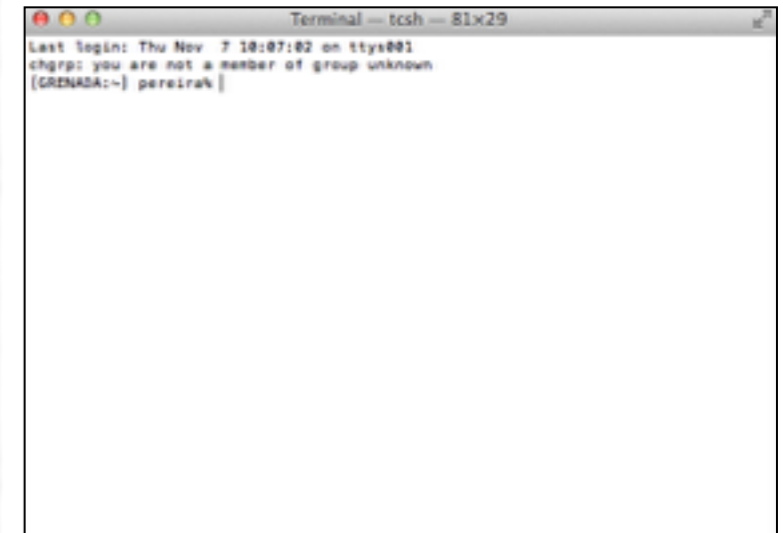
3 ways:



ArpNavigator



CCP4 Suite



Terminal

```
$warpbin/auto_ligand.sh [parameters]
```

This tutorial!

**Check the user
guide!**