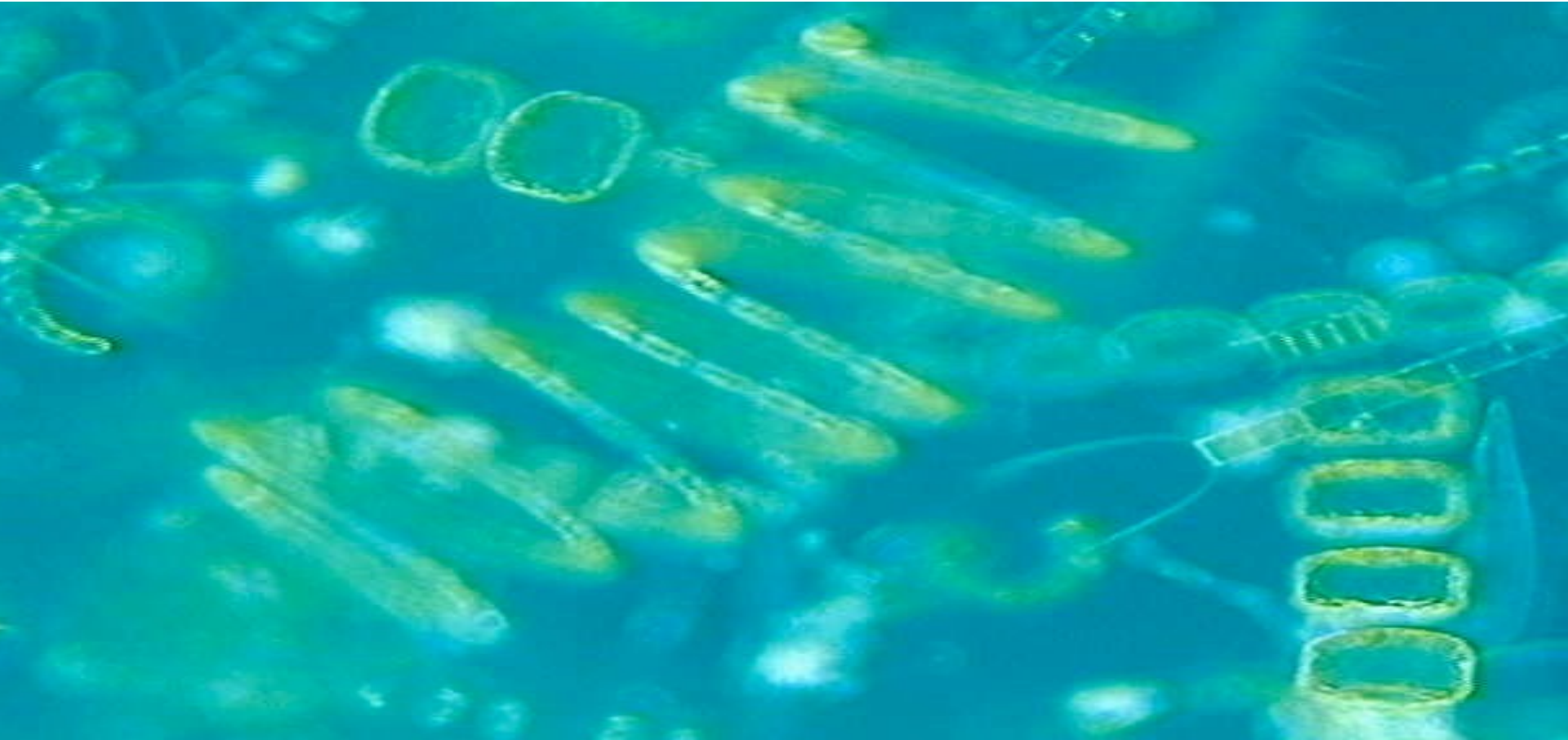


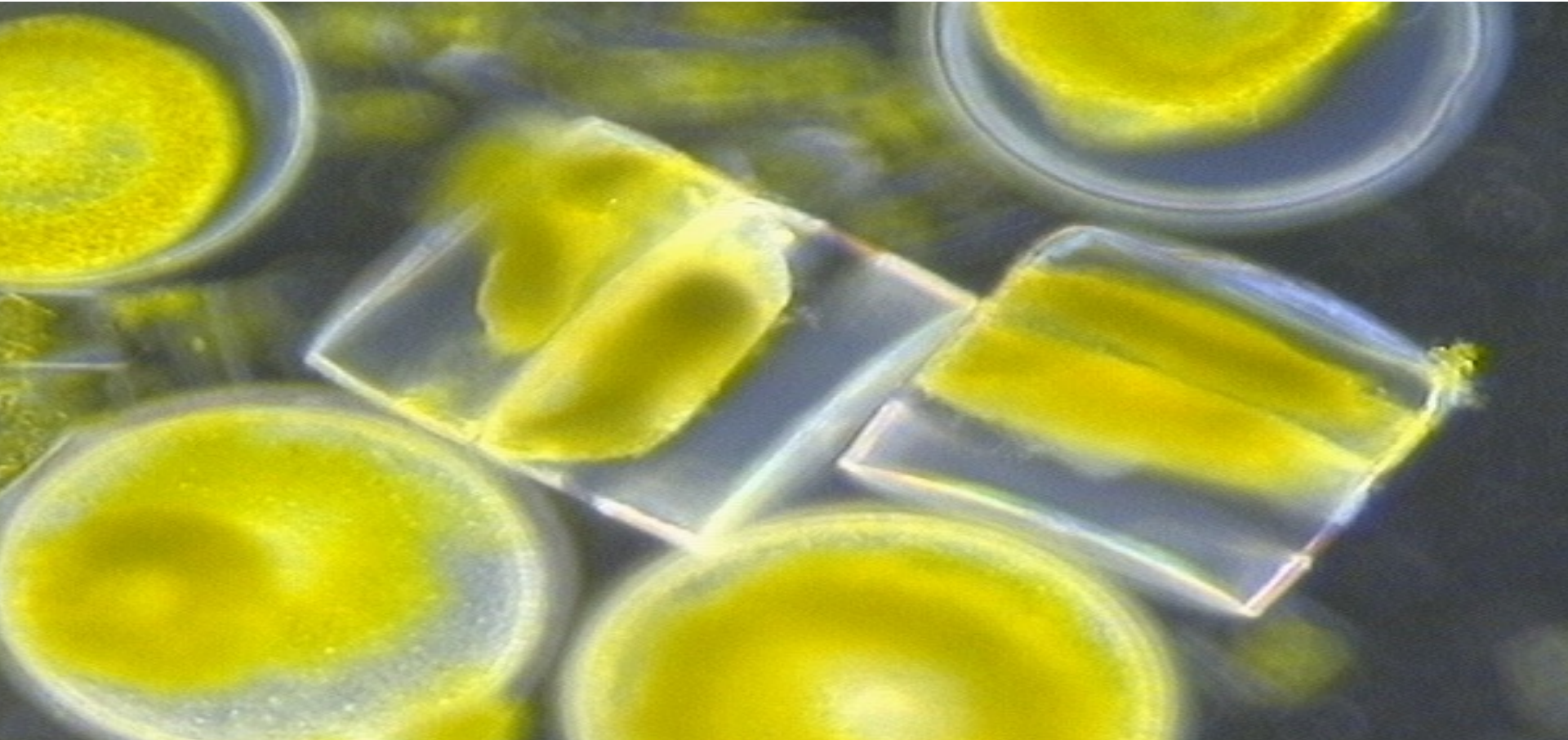
Introduction to PlanktoScope

**International Workshop and Training — Institut Teknologi
Indonesia (ITI) Campus, July 4, 2023**

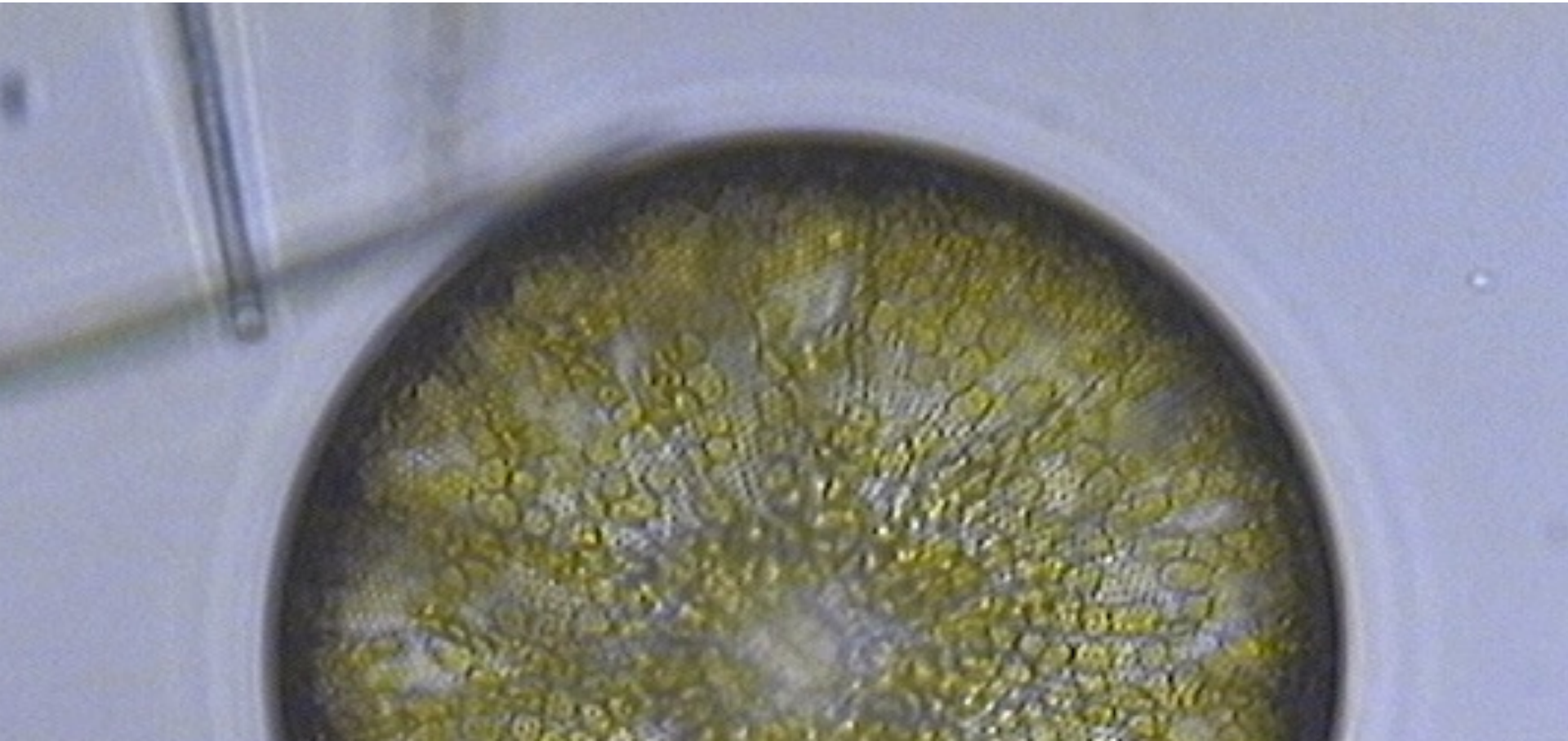
Phytoplankton – Grasses of the Sea



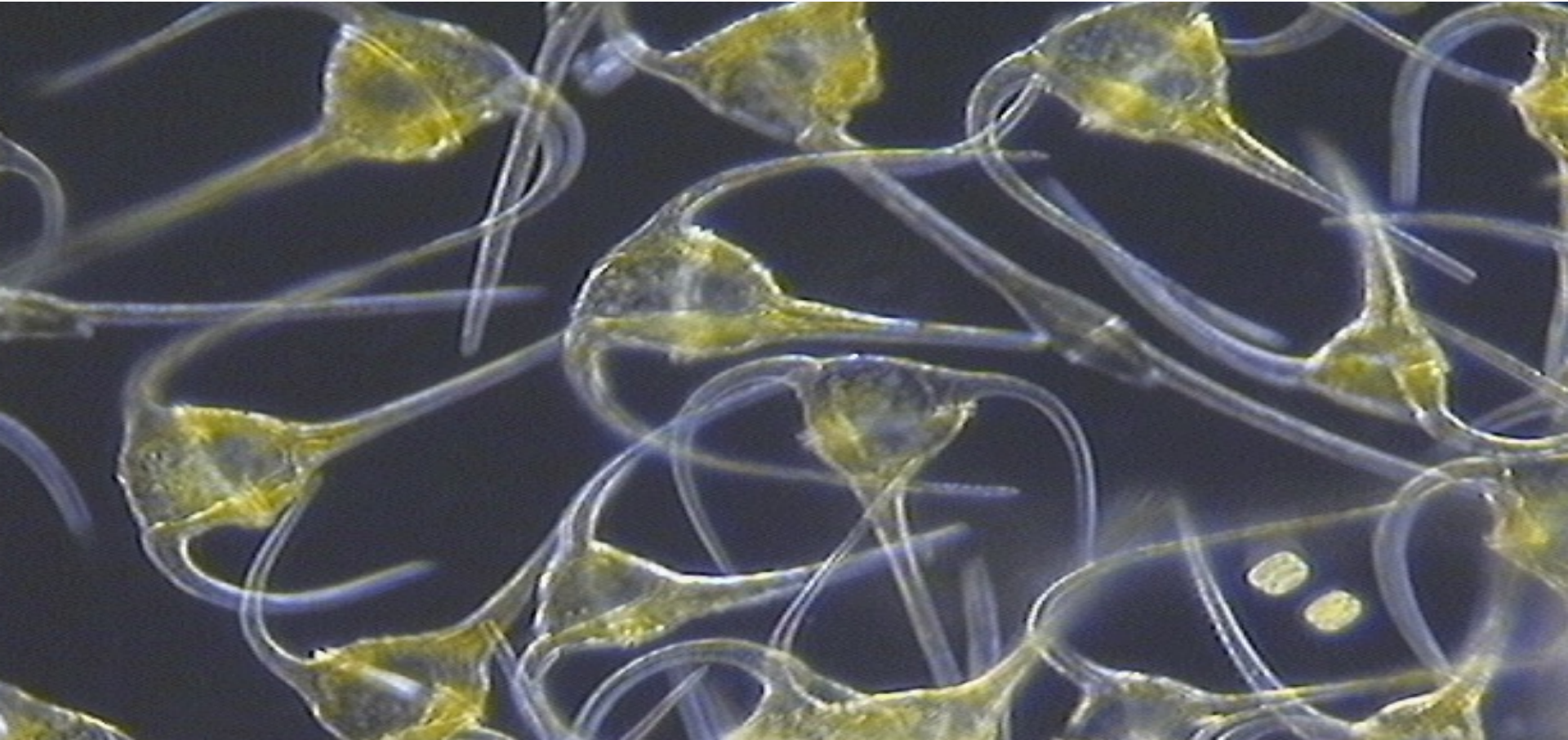
Phytoplankton – Grasses of the Sea

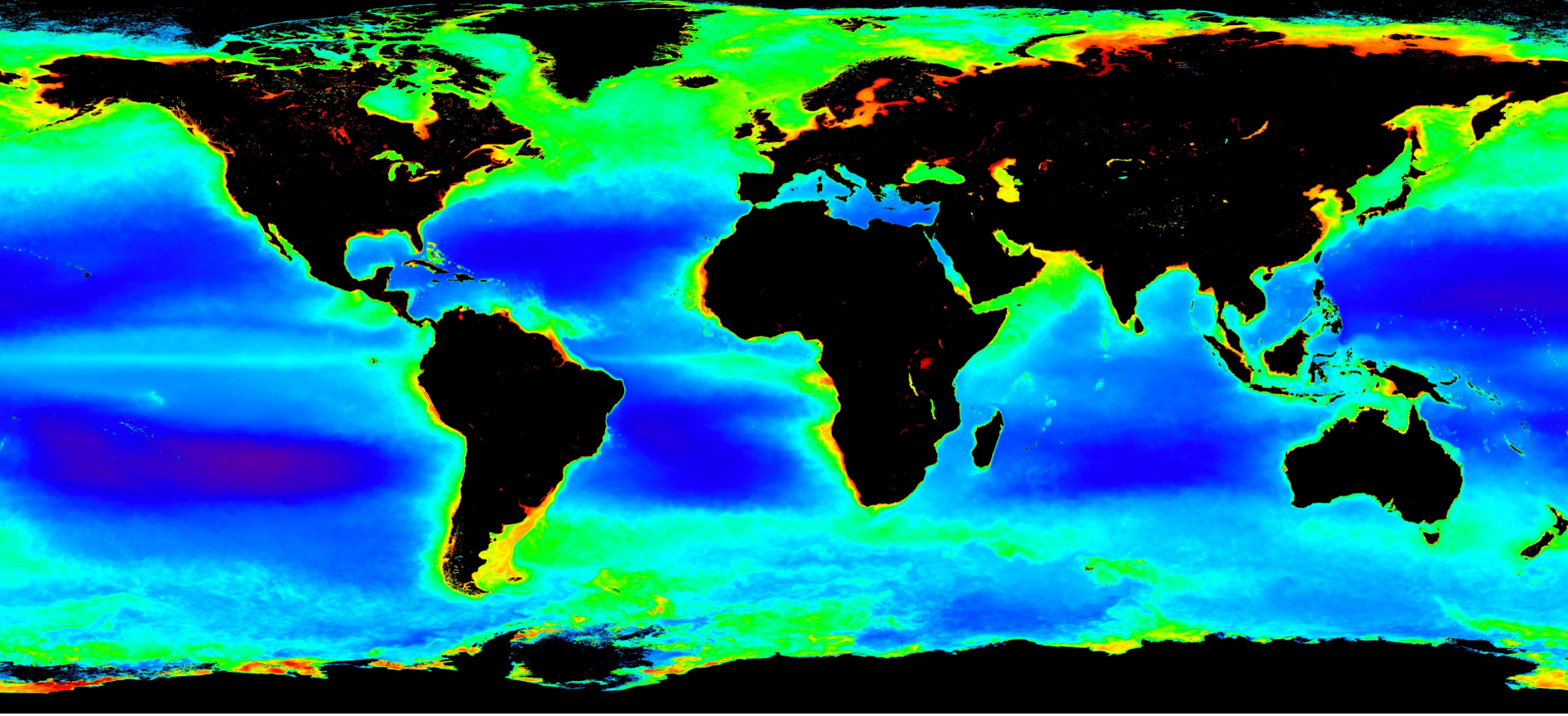


Phytoplankton – Grasses of the Sea



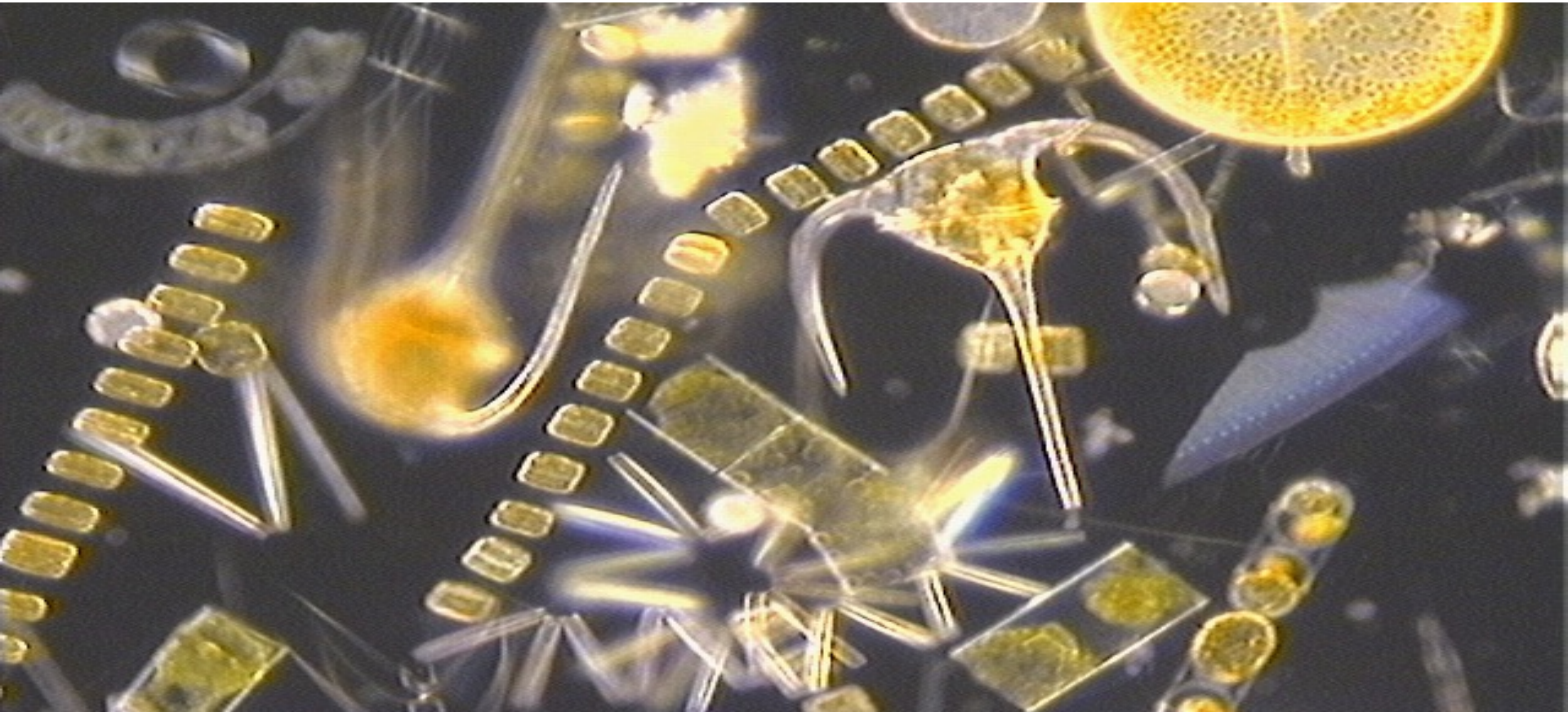
Phytoplankton – Grasses of the Sea





Phytoplankton — How much food is there?

Phytoplankton — Who is There?



What is PlanktoScope?

A microscope which:

- takes images of all plankton in a water sample



What is PlanktoScope?

A microscope which:

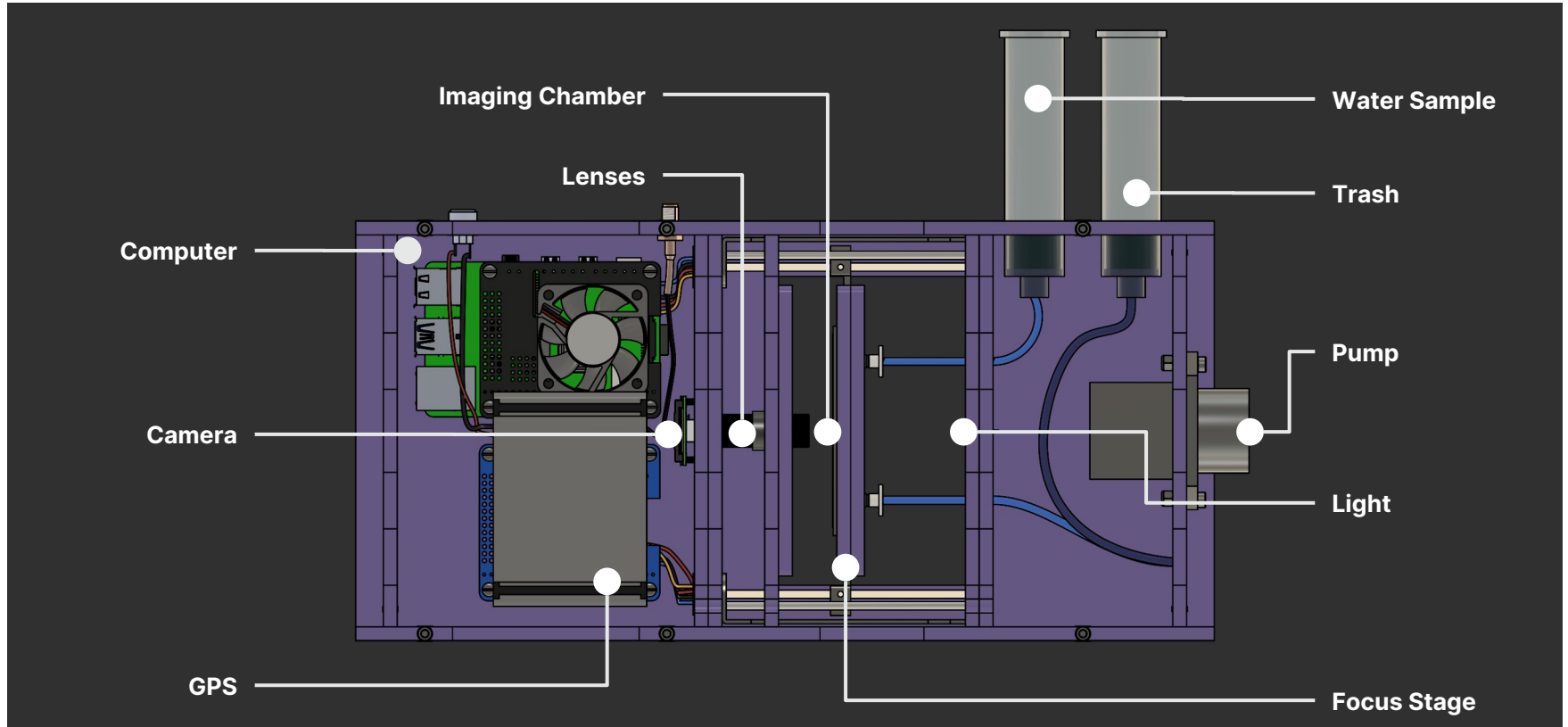
- takes images of all plankton in a water sample
- can automatically count each type of plankton

What is PlanktoScope?

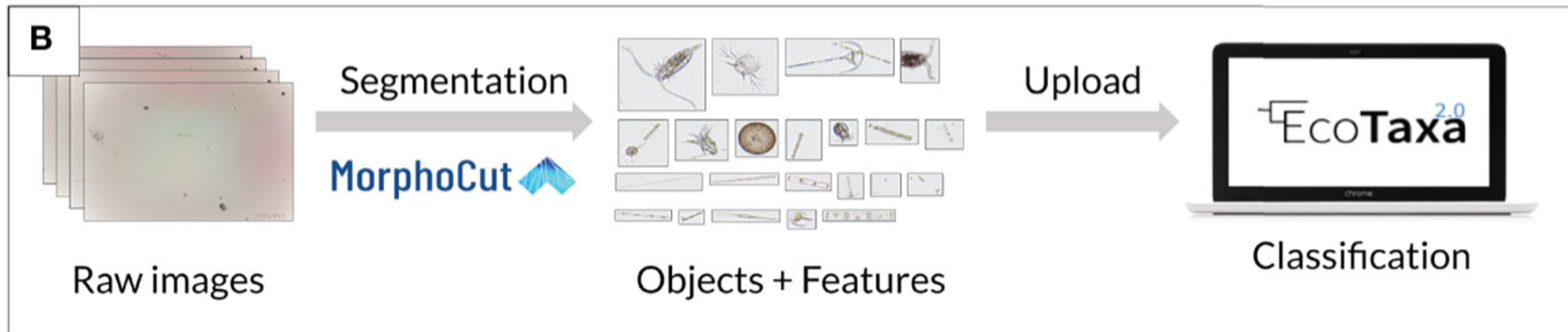
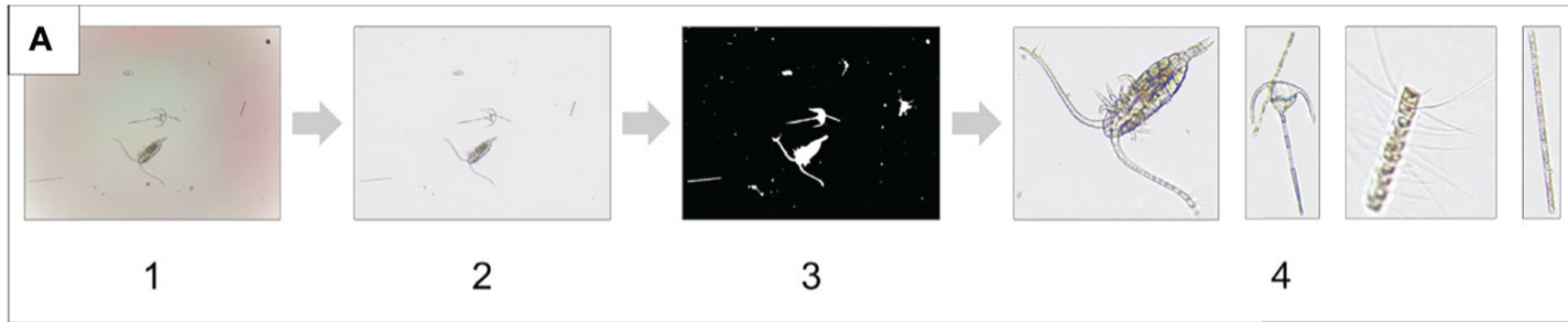
A microscope which:

- takes images of all plankton in a water sample
- can automatically count each type of plankton
- costs \$500 - 600 USD in components (versus 10's of thousands of dollars for commercial instruments)

How does PlanktoScope work?



What sort of data does Planktoscope produce?



What does EcoTaxa do?

EcoTaxa 2.5 Project Filtered Planktoscope FortM (0, 644, 0, 0 / 644) Run: 2 Error: 2 Done: 2 Fabien Lombard (log out)

Filter: Taxo=Ceratium sp. X

Action

Update view & apply filter

Select all ↑↓ Score Display Status All 100 30

Taxonomy filter Other filters

- Asterionellopsis 0 16
- ▼ Copepoda 0 1
 - nauplii < Copepoda 0 146
- ▼ Coscinodiscophycidae 8 44
 - Bacteriastrium < Chaetocerotales 0 208
 - Chaetoceros < Chaetocerotales 0 19
- ▼ Dinophyceae 0 855
 - Ceratium sp. 0 644**
 - Neoceratium 01 0 609
 - Neoceratium furca < Neoceratium 0 100
 - Neoceratium pentagonum 0 99
 - Noctiluca < Noctilucaeae 0 16
 - Oxytoxum 16 244
 - Pyrophacus 0 2
 - Ditylum 0 74
 - Eucampia 0 22
 - Eutintinnus 0 213

Ceratium sp. Score : 0.91	Ceratium sp. Score : 0.89	Ceratium sp. Score : 0.83	Ceratium sp. Score : 0.83	Ceratium sp. Score : 0.82	Ceratium sp. Score : 0.81	Ceratium sp. Score : 0.80	Ceratium sp. Score : 0.80	Ceratium sp. Score : 0.79	Ceratium sp. Score : 0.79
Ceratium sp. Score : 0.78	Ceratium sp. Score : 0.76	Ceratium sp. Score : 0.76	Ceratium sp. Score : 0.76	Ceratium sp. Score : 0.76	Ceratium sp. Score : 0.75	Ceratium sp. Score : 0.75	Ceratium sp. Score : 0.74	Ceratium sp. Score : 0.74	Ceratium sp. Score : 0.73
Ceratium sp. Score : 0.70	Ceratium sp. Score : 0.70	Ceratium sp. Score : 0.70	Ceratium sp. Score : 0.70	Ceratium sp. Score : 0.70	Ceratium sp. Score : 0.69	Ceratium sp. Score : 0.69	Ceratium sp. Score : 0.68	Ceratium sp. Score : 0.68	Ceratium sp. Score : 0.68
Ceratium sp. Score : 0.68	Ceratium sp. Score : 0.68	Ceratium sp. Score : 0.67	Ceratium sp. Score : 0.66	Ceratium sp. Score : 0.66	Ceratium sp. Score : 0.66	Ceratium sp. Score : 0.66	Ceratium sp. Score : 0.65	Ceratium sp. Score : 0.65	Ceratium sp. Score : 0.65

Resources

In English:

- Website: <https://www.planktoscope.org/>
- Paper by Thibaut Pollina, Adam G. Larson, et al. published in *Frontiers in Marine Science*, July 2022: <https://doi.org/10.3389/fmars.2022.949428>
- Usage instructions for scientists: <https://www.protocols.io/view/planktoscope-protocol-for-plankton-imaging-bytypwpw.html>