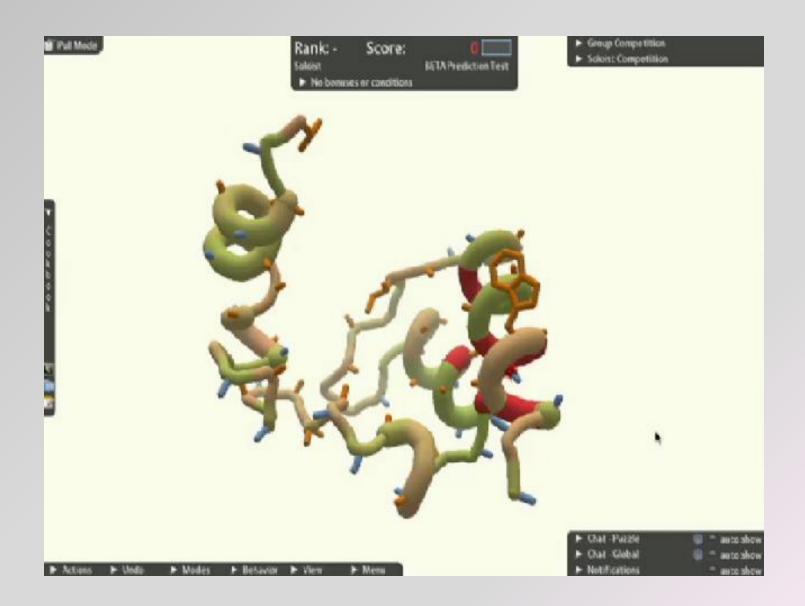
## Learning through scientific discovery

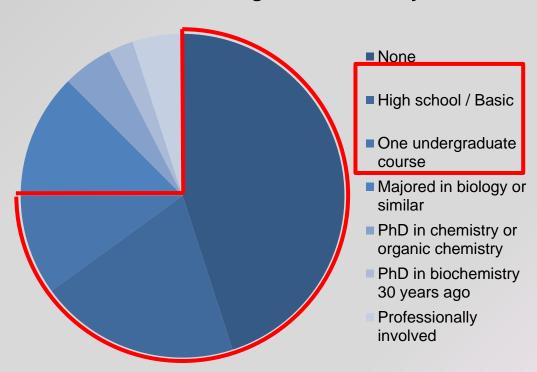
Zoran Popović

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## Top 20 game-based experts

#### **Prior knowledge of biochemistry**





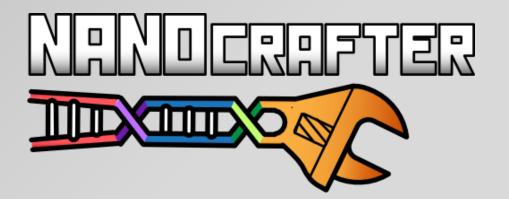




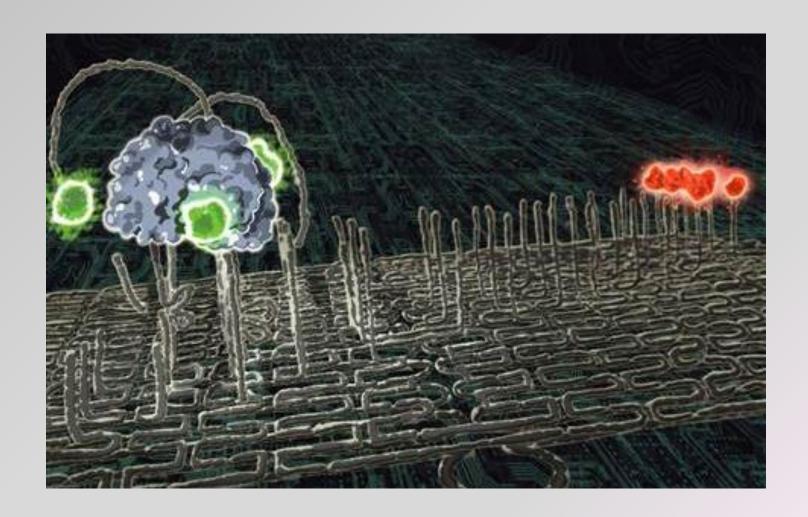


### Foldit Video Gamers Join the Fight Against Ebola Virus

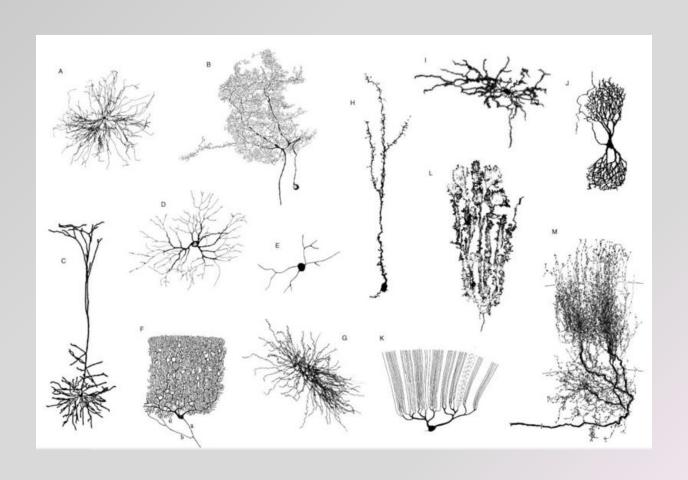
Several vaccines are already in the pipeline to counter the devastating threat posed by the Ebola virus in Africa, but game players are using a collaborative puzzle program called Foldit to help look for new treatments. The online game, which was created by University of Washington researchers in 2008, enlists players to find the best ways to twist virtual protein molecules into the desired shapes.







## **Neuron Reconstruction**



## Scientific-discovery for high school

- Biochemistry
- Synthetic biology
- Neuroscience

## Enlearn platform

- Infinitely variable content
- Optimal pathway discovery
  - Student groups
  - Teacher
- Optimize for mastery and engagement

## Mastery

3 equations without errors with behaviors that indicate fluency

$$ax + b = \frac{c + d}{e}$$

$$\frac{abx}{bc} + c + 0 = d + yz$$

$$\frac{b-c}{x} = c+d-c$$



We did it!

EQUATIONS:

390,935

TOTAL EFFORT: 6 months 28 days 2 hours

EQUATIONS SOLVED:

KIDS ARE STILL PLAYING:

429,053

TOTAL EFFORT:

7m 20d 07



#### Winners Announced!

This year's Washington State Algebra Challenge was a fantastic success. Not only did we exceed our original goal of 250,000 equations, but we had participation from a total of 4,192 students representing public and private schools, home school programs, and after school groups. Check out the winners by clicking the button below!

VIEW WINNERS!





## **7 700 000 Likninger løst**

DET HENDTE:

13. - 17. Januar 2014

36 110 elever løste likninger sammen

1711 klasser deltok i utfordringen

93% oppnådde "mestring" innen 1½ time

### En uforglemmelig matematikktime!

Fra 13. til 17. Januar 2014 ble en tilpasset versjon av DragonBox gjort gratis tilgjengelig for alle skoler i Norge. Les om hvordan det gikk her.





We did it!

**EQUATIONS:** 

644,936

TOTAL EFFORT: 9months 29days 22hours

EQUATIONS SOLVED:

KIDS ARE STILL PLAYING:

697,292

TOTAL EFFORT:

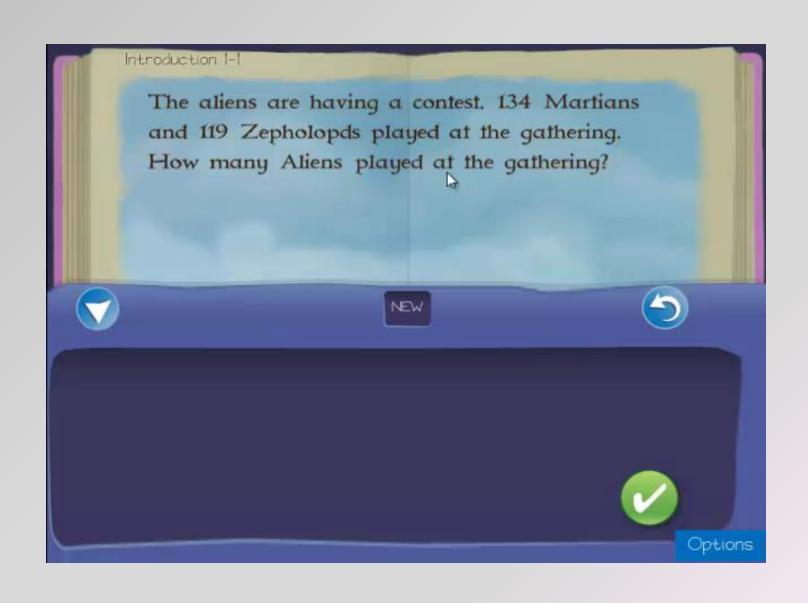
10m 25d 13



#### Congratulations!

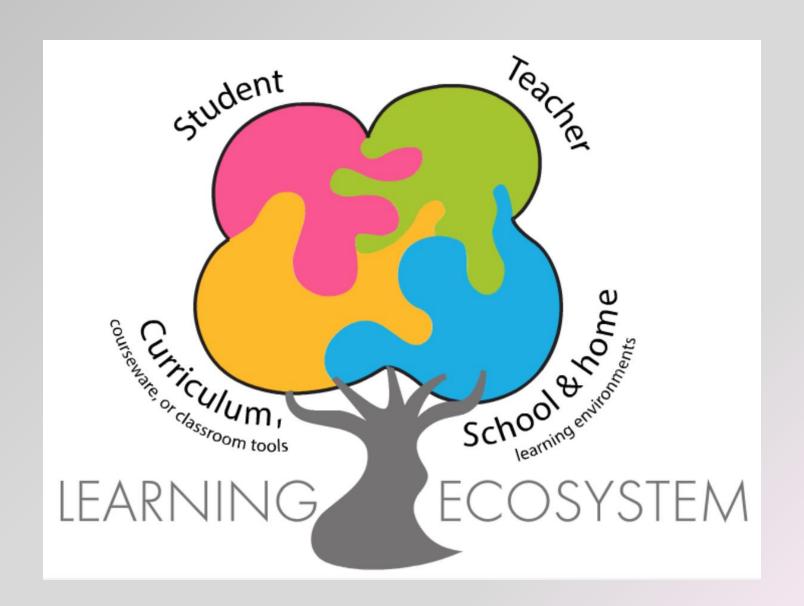
Over 6000 students completed over 600,000 equations – most of those during the first 5 days! Total student playing time reached almost 10 full months (24 hour per day)!! An amazing effort by all. Quite a few classrooms achieved over 95% mastery and all the students were exposed to (and hopefully excited by) the conceptual ideas involved in solving algebraic equations. Thanks to all who participated.

## Word Problem Solving

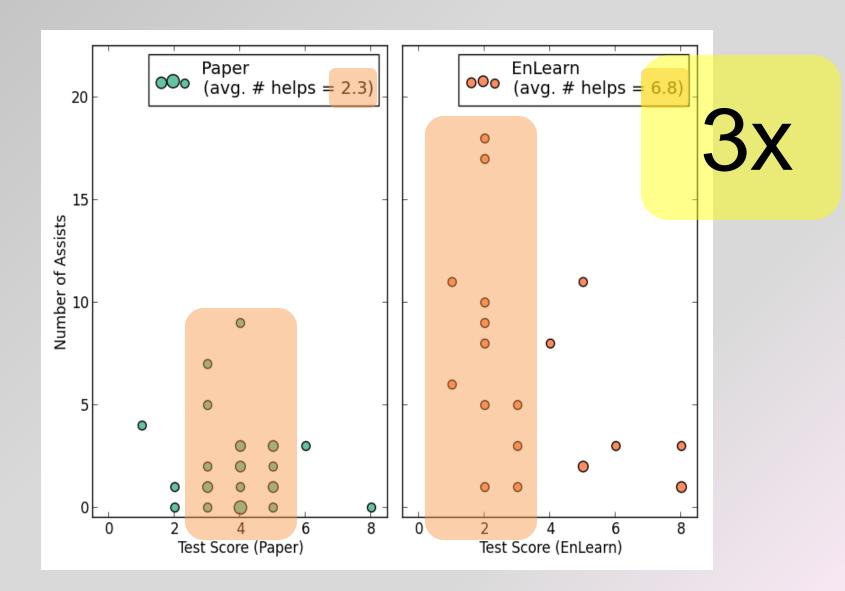


## Future challenges

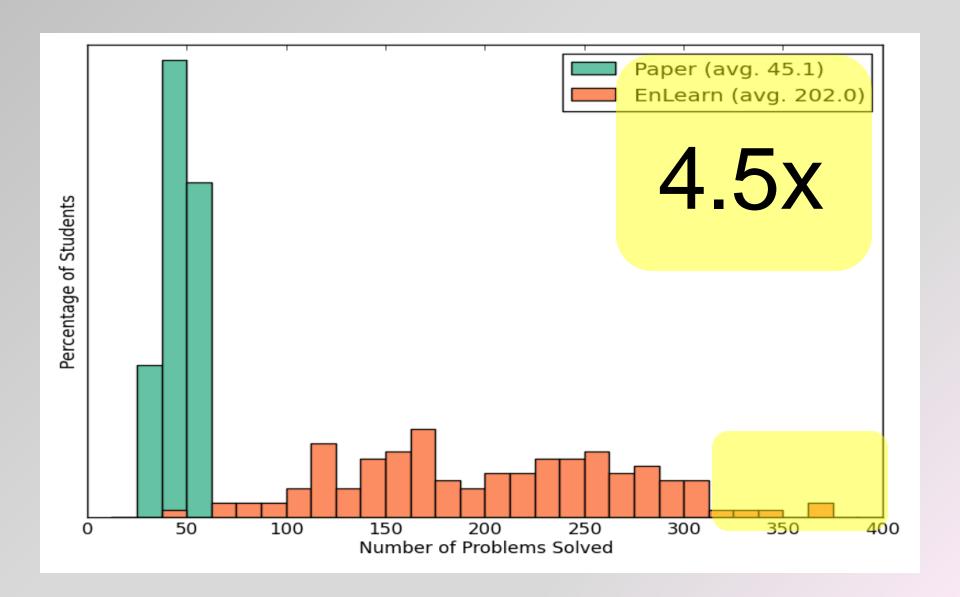
- Word problem solving challenges
- National event

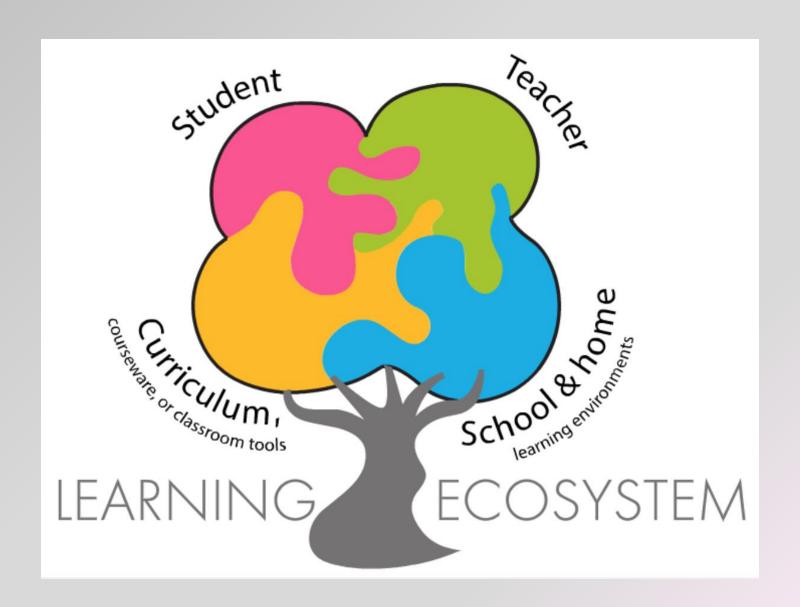


## **Teacher Effects**



## **Student Effects**





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