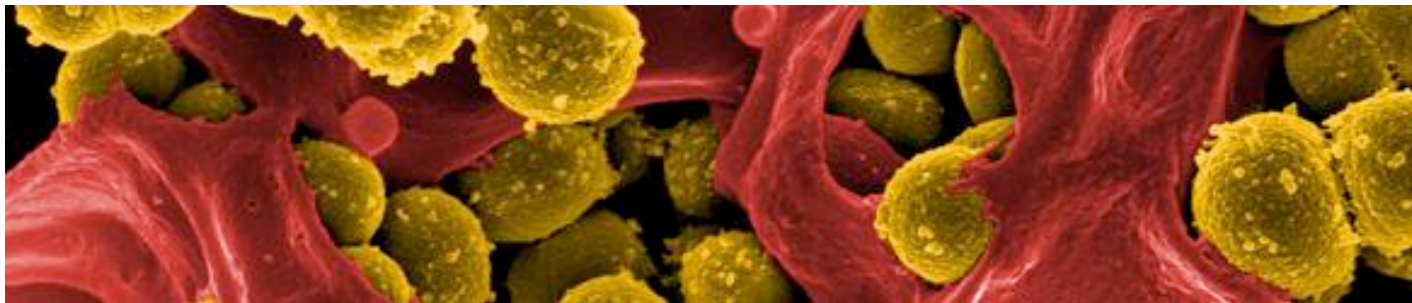


# Our Microbial Organ

## The Good and Bad Bugs of the Human Gut



Kevin Bonham  
Nadia Cohen  
Kyle Perry

# Outline for the Evening

- Kevin Bonham – Living in a Microbial World
- Nadia Cohen – The Gut and its Inhabitants
- Kyle Perry – Microbial Populations: How we study them and how we use them

# Living in a Microbial World

- Bacteria in the News
- What are bacteria?
- The “Microbiome”
- Where do they come from?

# Bacteria in the News



**Food industry mulls 'killer spinach' impact**  
Growers gauge effects of FDA E. Coli warning. Grocers, restaurants remove product from shelves, menus.



**Nearly 400 sick from salmonella in U.S.**



**Tainted Eggs Infect Thousands with Salmonella**

Egg Recall Scares Consumers for Good Reason: 2,000 and Counting Are Sick



**MRSA carriers have persistent infection risk**

# Everything's "Contaminated"

NYDailyNews.com

Do they have an app for hand sanitizer?  
Demo iPads at city Apple stores are  
crawling with bacteria

The Washington Post

Are 3D-Glasses Sanitary?

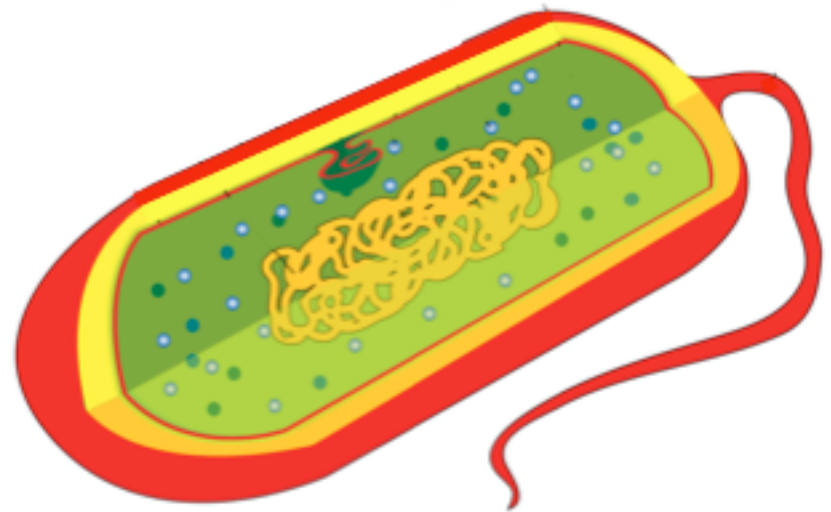
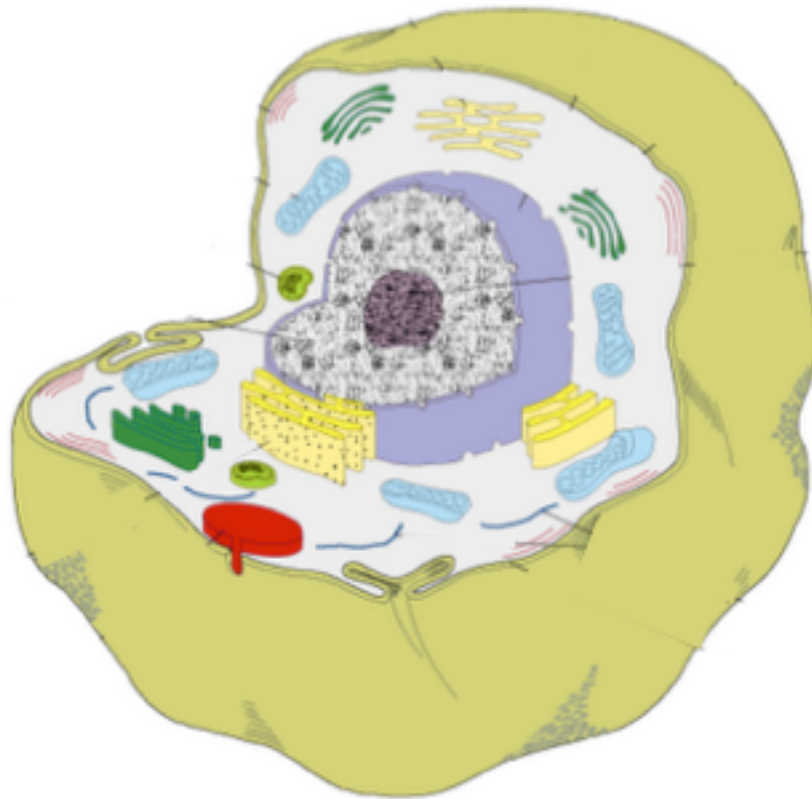
npr

Bacteria May Grow In Reusable Grocery  
Bags, But Don't Fret

# Living in a Microbial World

- Bacteria in the News
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- Brief Interlude on Bacteria and the Immune system

# Cells Are the Basic Unit of Life



[http://scienceblogs.com/clock/2006/11/cell\\_structure.php](http://scienceblogs.com/clock/2006/11/cell_structure.php)

[http://commons.wikimedia.org/wiki/File:Average\\_prokaryote\\_cell-\\_en.svg](http://commons.wikimedia.org/wiki/File:Average_prokaryote_cell-_en.svg)

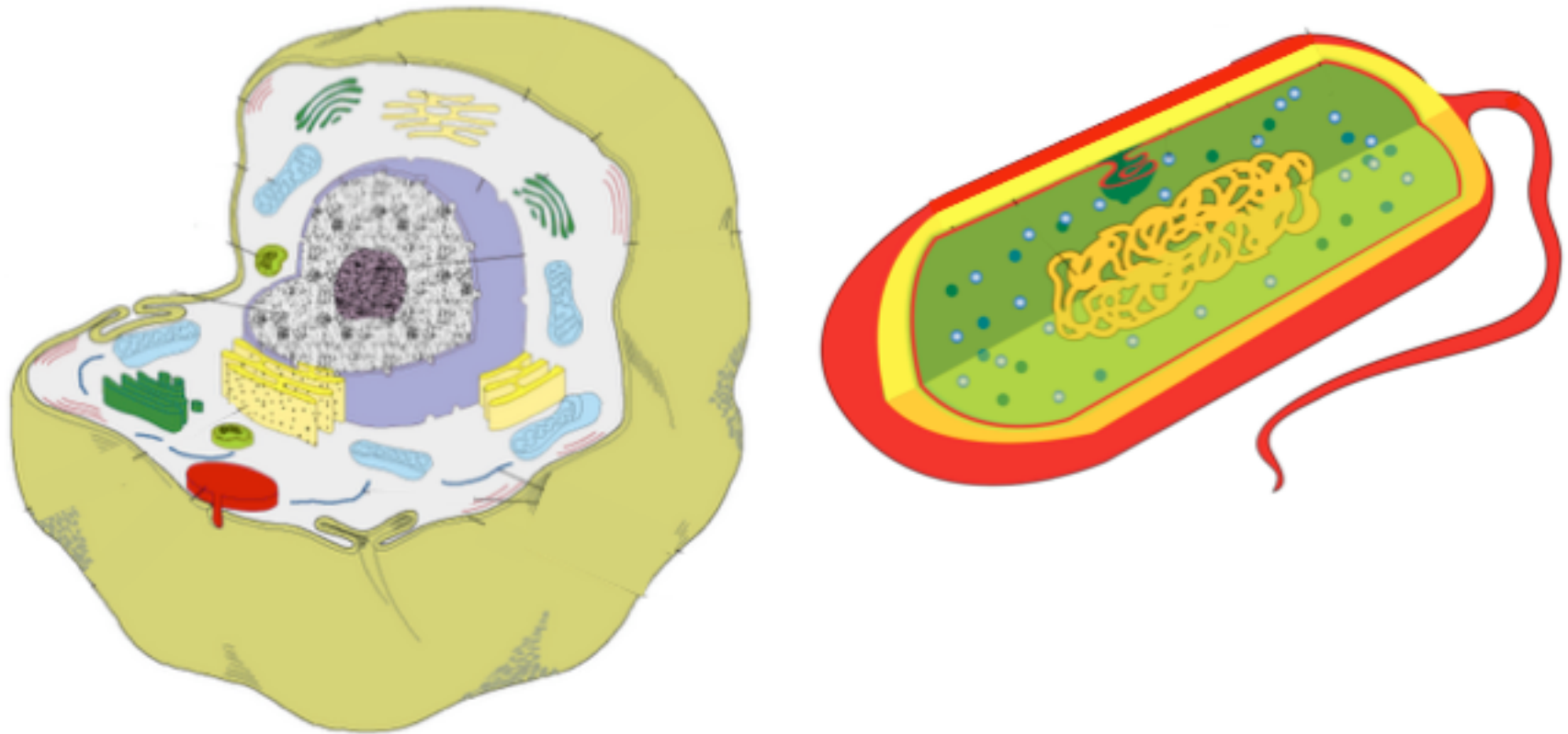
# 90% Microbe

~ 10 Trillion Human Cells

~ 100 Trillion Bacterial Cells



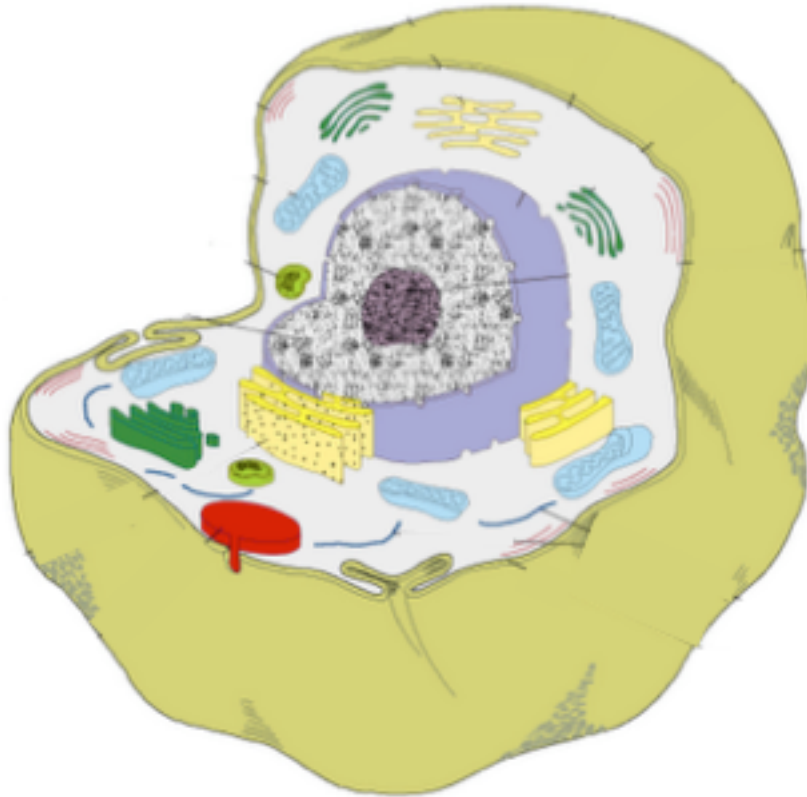
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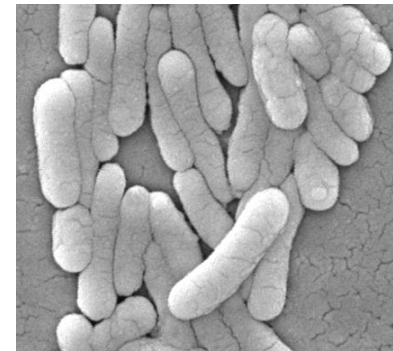
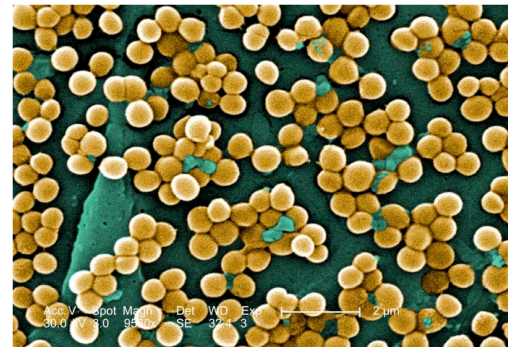
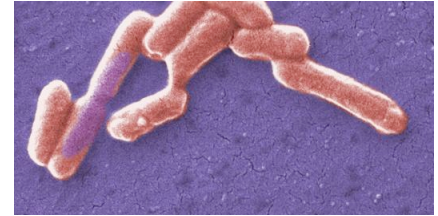
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# The Good vs the Bad

Commensal: An organism that colonizes you but does no harm

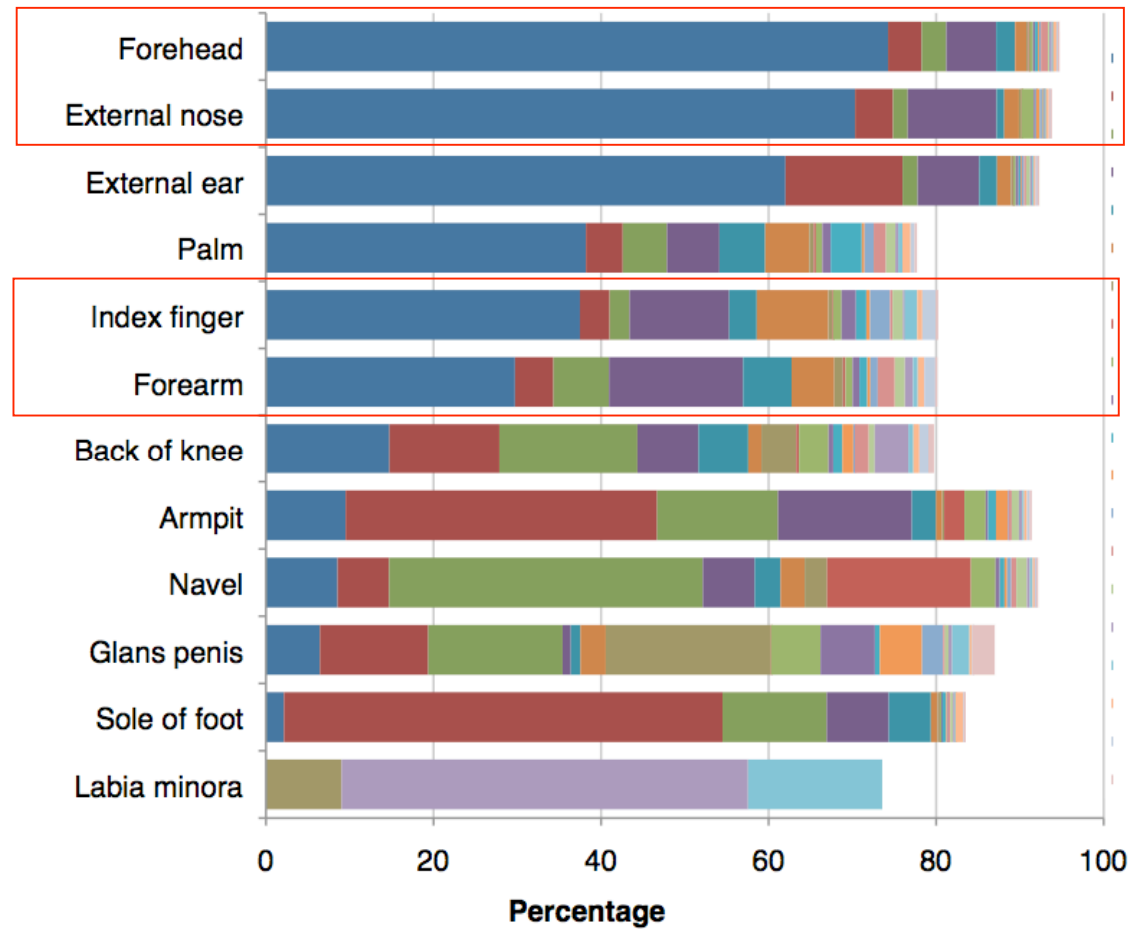
Pathogen: An organism that causes disease



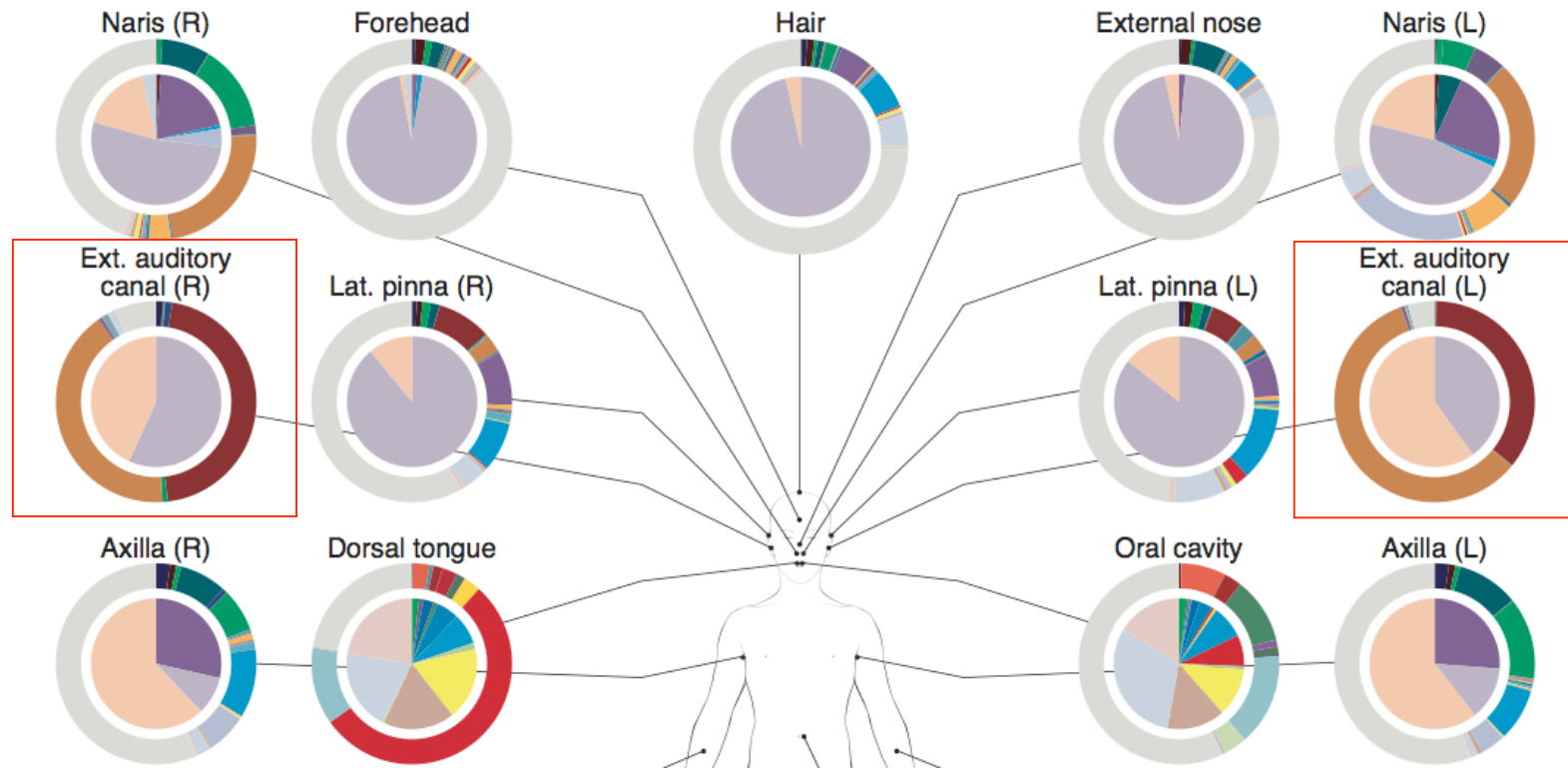
# Living in a Microbial World

- Bacteria in the News
- What are bacteria?
- **The “Microbiome”**
- Where do they come from?
- Brief Interlude on Bacteria and the Immune system

# Different Environments have Different Bacteria



# Different Environments have Different Bacteria



# Different Environments have Different Bacteria

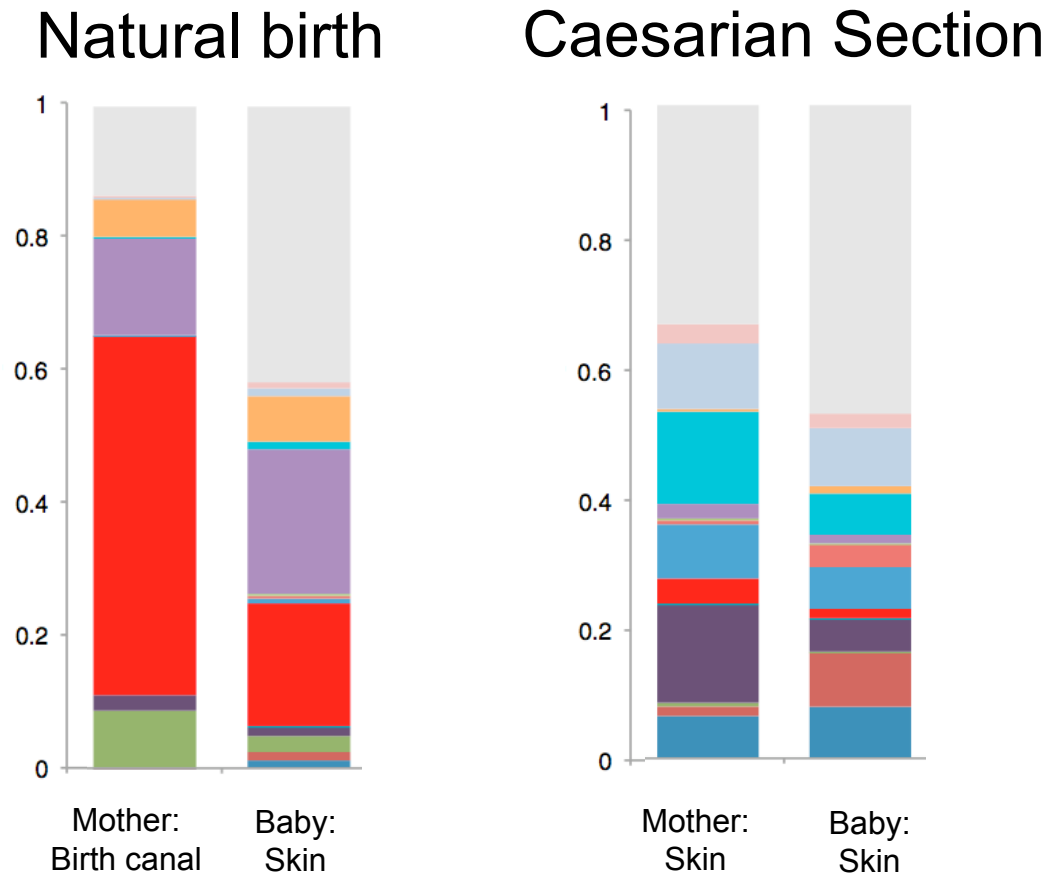


# Microbes Galore

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- **Where do they come from?**
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# Colonized from birth



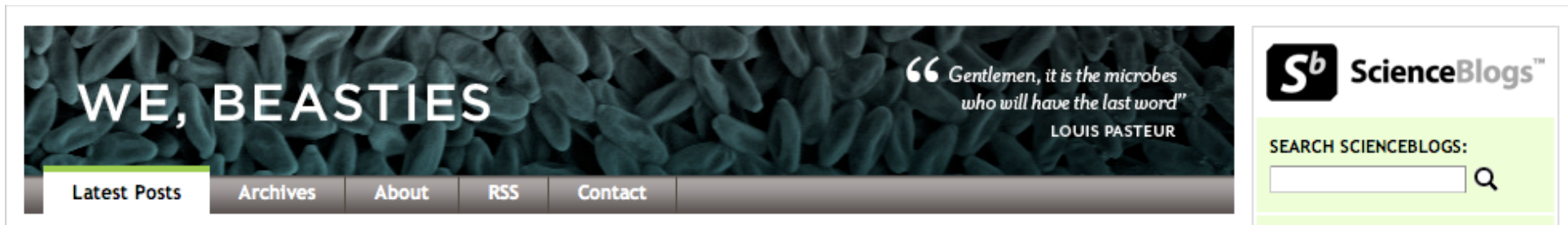
# Next up!

- Kevin Bonham – Living in a Microbial World
- **Nadia Cohen – The Gut and its Inhabitants**
- Kyle Perry – The Future of Microbial Science

# Thank you!

## Questions?

### Shameless plug:



[scienceblogs.com/webeasties](http://scienceblogs.com/webeasties)