



RhAPP

RHEUMATOLOGY ADVANCED
PRACTICE PROVIDERS

Second Annual National Conference

September 30 – October 2, 2021
Phoenix, AZ



RhAPP

RHEUMATOLOGY ADVANCED
PRACTICE PROVIDERS

Immunology: Part 3

Amanda Mixon, PA-C

Monica Richey, NP

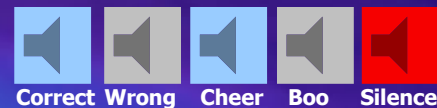
JEOPARODY JEOPARODY JEOPARODY JEOPARODY JEOPARODY

JEOPARODY

JEOPARODY JEOPARODY JEOPARODY JEOPARODY JEOPARODY

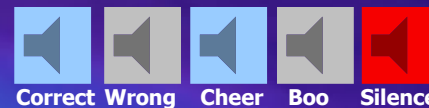
HERE ARE TODAY'S CATEGORIES

JEDPARODY



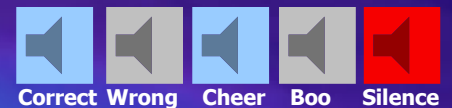
**TWINKLE,
TWINLE
LITTLE
CYTOKINE**

JEDPARODY



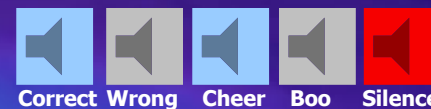
ME, MYSELF AND IRENE

JEOPARDY!



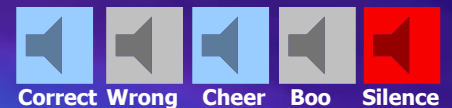
SEMPER FI

JEDPARODY



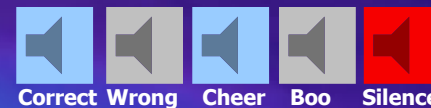
CHEMICAL WARFARE

JEDPARODY



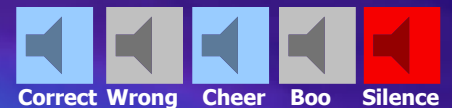
**AN APC AND A
MHC WALK
INTO A BAR**

JEOPARDY



HIGH TIMES AT IMMUNE ACADEMY

JEOPARDY!



Twinkle
little
cytokine

Me, myself
and Irene

Semper Fi

Chemical
Warfare

An APC and
A MHC

High times

\$100

\$100

\$100

\$100

\$100

\$100

\$200

\$200

\$200

\$200

\$200

\$200

\$300

\$300

\$300

\$300

\$300

\$300

\$400

\$400

\$400

\$400

\$400

\$400

\$500

\$500

\$500

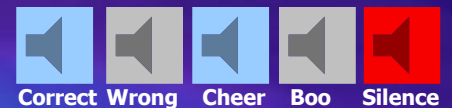
\$500

\$500

\$500

FINAL JEOPARDY

JEOPARDY

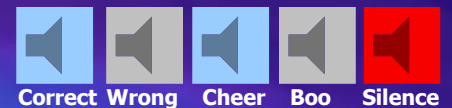


**I am a cytokine
that affects most
systems during
inflammation**

Start Timer

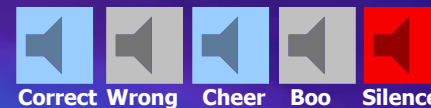
GO TO
RESPONSE

JEPARODY



What is IL-6

JEDPARODY

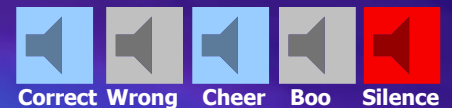


**By blocking this
intracellular
signaling
pathway, I block
T-cell activation**

Start Timer

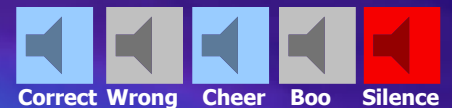
GO TO
RESPONSE

JEDPARODY



What is Jak/Stat

JEDPARODY

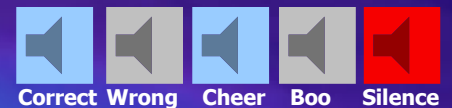


I interfere with viruses

Start Timer

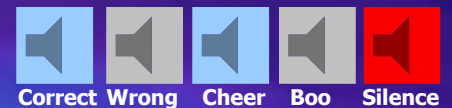
GO TO
RESPONSE

JEOPARDY



What is Interferon

JEDPARODY

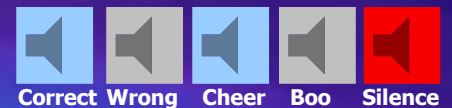


**I am cytokine
that stops
inflammation by
activating T-reg
cells**

Start Timer

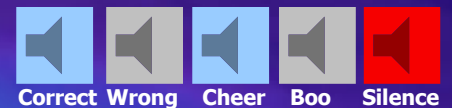
GO TO
RESPONSE

JEDPARODY



What is IL-10

JEDPARODY

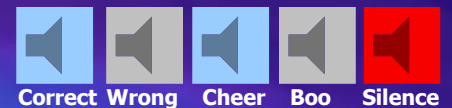


**In 1998 I became the
first cytokine to be
blocked as a treatment
for RA**

Start Timer

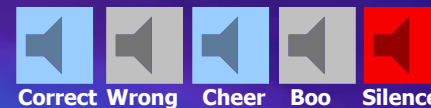
GO TO
RESPONSE

JEOPARDY



What is TNF- alpha

JEDPARODY

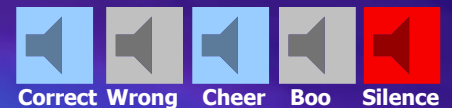


**An imbalance
between the
types of
organism in a
person's biome**

Start Timer

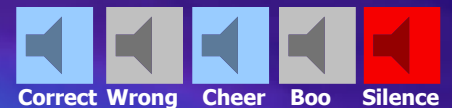
GO TO
RESPONSE

JEDPARODY



What is Dysbiosis

JEDPARODY

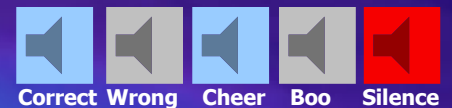


I am part of the
cell mediated
immunity that
stop the
inflammatory
process

Start Timer

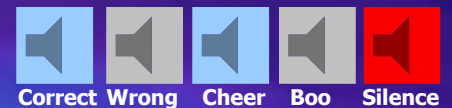
GO TO
RESPONSE

JEDPARODY



What T-reg

JEDPARODY

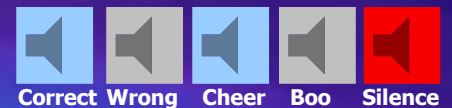


**Circulating auto-
antibodies
without clinical
consequences**

Start Timer

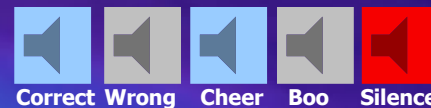
GO TO
RESPONSE

JEOPARDY



**What is
intermediate
autoimmunity**

JEDPARODY

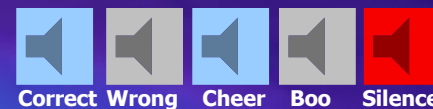


**In this phase
there is a
disrupted T-reg/T-
cell balance**

Start Timer

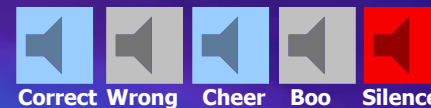
GO TO
RESPONSE

JEOPARDY



**What is
propagation
phase**

JEDPARODY

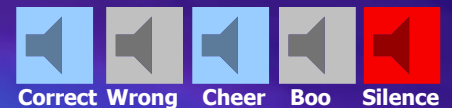


**These diseases were
rare among HIV
patients in the Pre-
HAART era, signaling
a T-cell involvement**

Start Timer

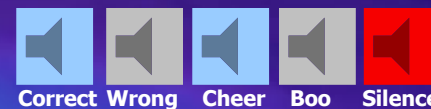
GO TO
RESPONSE

JEDPARODY



SLE and RA

JEDPARODY

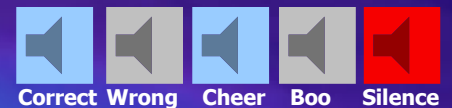


**On the APC I
present foreign
bodies to the
CD4+ (T-helper)**

Start Timer

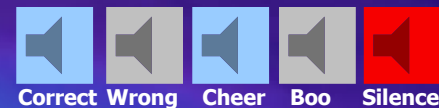
GO TO
RESPONSE

JEDPARODY



What is MHC II

JEDPARODY

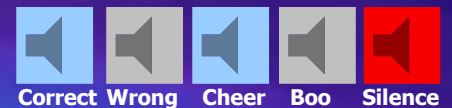


**I am an ancient
protein and a
deficiency will
impair both B and
T-cells**

Start Timer

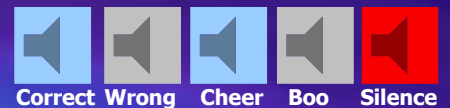
GO TO
RESPONSE

JEDPARODY



Complement pathways

JEDPARODY

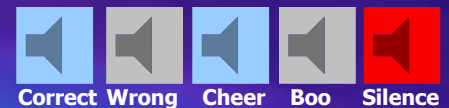


**We are the first
line of defense
and respond in
less than 2 hours**



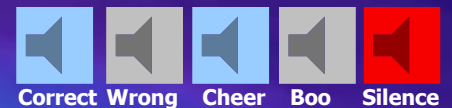
**GO TO
RESPONSE**

JEDPARODY



**What is the
innate immune
system**

JEDPARODY

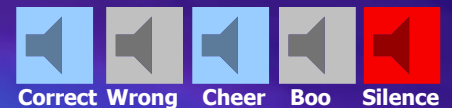


I have many
names depending
on the tissue I
am traveling
through

Start Timer

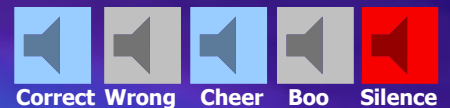
GO TO
RESPONSE

JEDPARODY



What is Monocyte

JEDPARODY

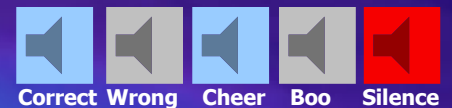


**I only live for 7
days, always “on
call” and induce
apoptosis**

Start Timer

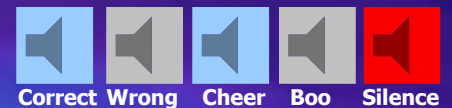
GO TO
RESPONSE

JEDPARODY



What is Natural Killer cells

JEOPARDY!

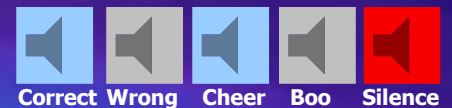


**Blocking this
specific pathway
can lead to an
increase in viral
infection**

Start Timer

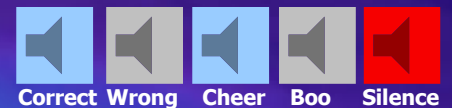
GO TO
RESPONSE

JEDPARODY



Jak1 and Jak2

JEOPARDY

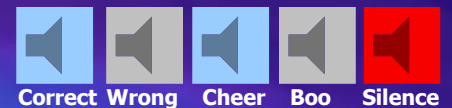


**I produced by
Plasma cells
during acute
infection**

Start Timer

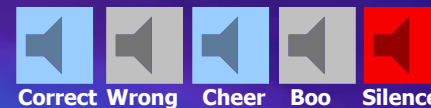
GO TO
RESPONSE

JEOPARDY



What is IgM

JEDPARODY

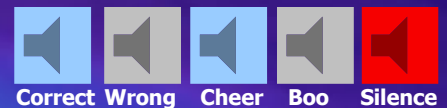


**Making anibodies
is my specialty**



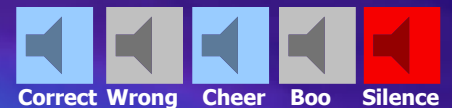
**GO TO
RESPONSE**

JEDPARODY



What is Plasma cells

JEDPARODY

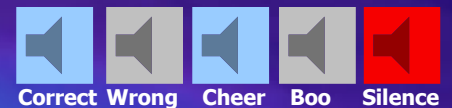


**Formed by wrong
activation of B
cells by high
levels of
interferon 1**

Start Timer

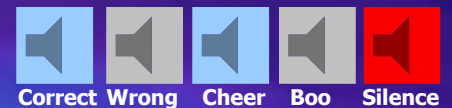
GO TO
RESPONSE

JEDPARODY



What is Auto-antibodies

JEPARODY

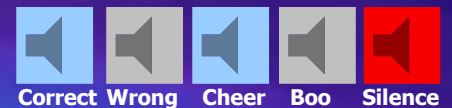


**Anti-CCP, DsDNA
and Smith are my
specialty**

Start Timer

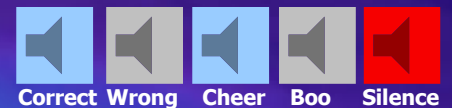
GO TO
RESPONSE

JEDPARODY



What are Auto-reactive B cells

JEDPARODY



**In the liver I am
know as a Kupfer
Cell**

Progress bar with 10 red segments. The 5th segment from the left contains the text "Start Timer".

**GO TO
RESPONSE**

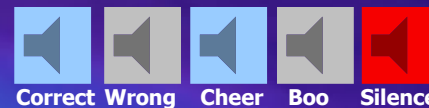
JEDPARODY



Five square buttons for audio feedback: "Correct" (blue speaker icon), "Wrong" (grey speaker icon), "Cheer" (blue speaker icon), "Boo" (grey speaker icon), and "Silence" (red speaker icon).

**What is a
macrophage**

JEDPARODY

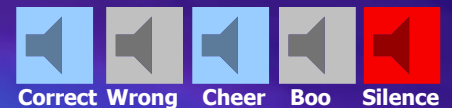


**I am a cell
surface HLA type
and activate both
CD8 and CD4
cells**

Start Timer

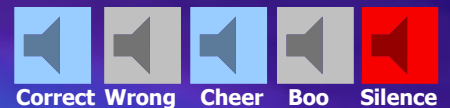
GO TO
RESPONSE

JEDPARODY



What is MHC I and 2

JEDPARODY

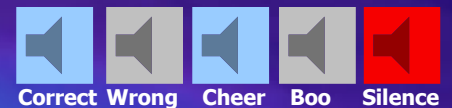


**I perforate and
tag bacteria cell
wall to facilitate
phagocytosis**

Start Timer

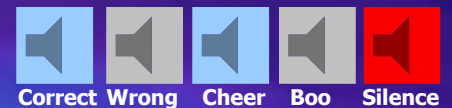
GO TO
RESPONSE

JEDPARODY



What is Membrane Attack complex

JEPARODY

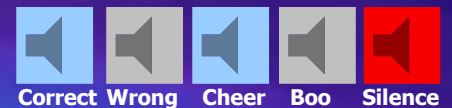


**I am responsible
for chronic
inflammation and
granuloma
formation**

Start Timer

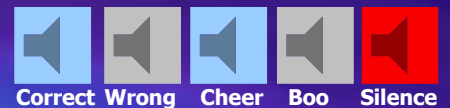
GO TO
RESPONSE

JEDPARODY



macrophage

JEOPARDOY

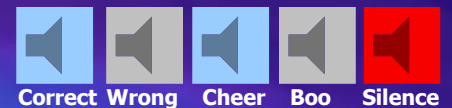


**I am the only
medication
prevent the APC
from directly
activating the T-
cell**

Start Timer

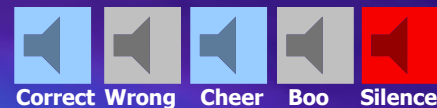
GO TO
RESPONSE

JEDPARODY



What is Abatacept

JEPARODY

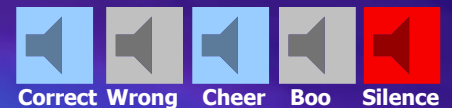


Thrombotic disorders, schizophrenia, graftX hosts disease are associated with this alterations in these proteins

Start Timer

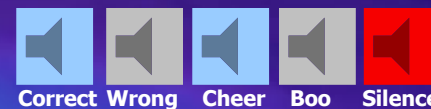
GO TO RESPONSE

JEDPARODY



**What is the
complement
system**

JEPARODY

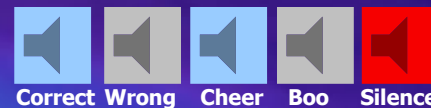


I have both a
regulatory and a
inflammatory
side

Start Timer

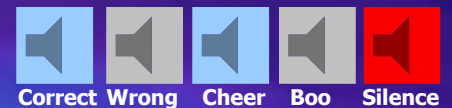
GO TO
RESPONSE

JEDPARODY



What is IL-6

JEDPARODY

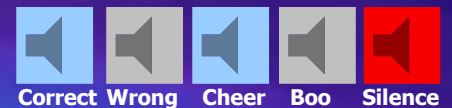


**Neisseria and
pyogenic
infections are
common in this
deficiency**

Start Timer

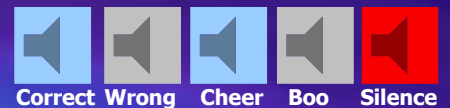
GO TO
RESPONSE

JEDPARODY



What is C3/5/8

JEDPARODY

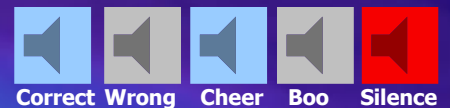


**In SLE clinical
and serological
activity correlate
with this gene
expression**



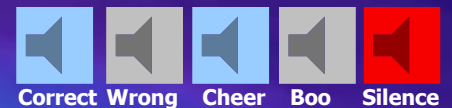
**GO TO
RESPONSE**

JEDPARODY



Interferon

JEDPARODY

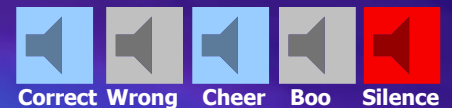


I block baff and
bliss

Start Timer

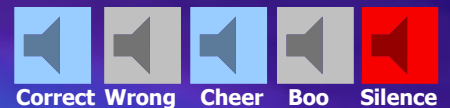
GO TO
RESPONSE

JEDPARODY



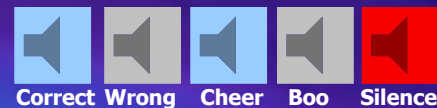
**What is
belimumab**

JEOPARDOY



FINAL JEOPARDOY

JEOPARDOY

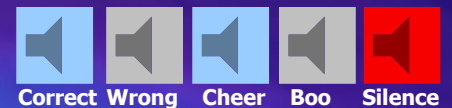


**These drug
categories block
macrophage
activity**



GO TO
PROMPT
(RESPONS
E)

JEDPARODY



**What is anti-il1,
il-6 and TNF**

JEOPARDY

