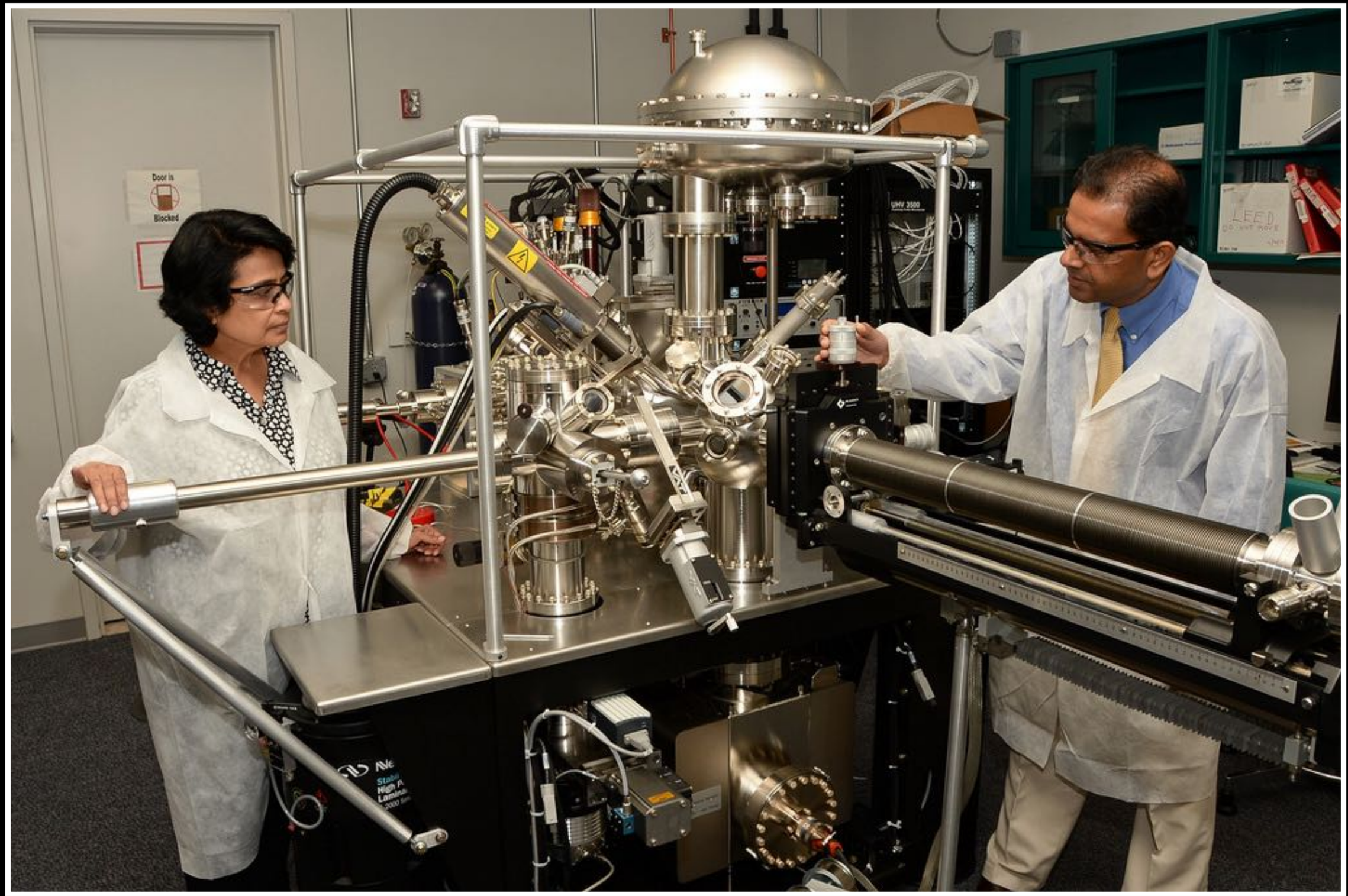
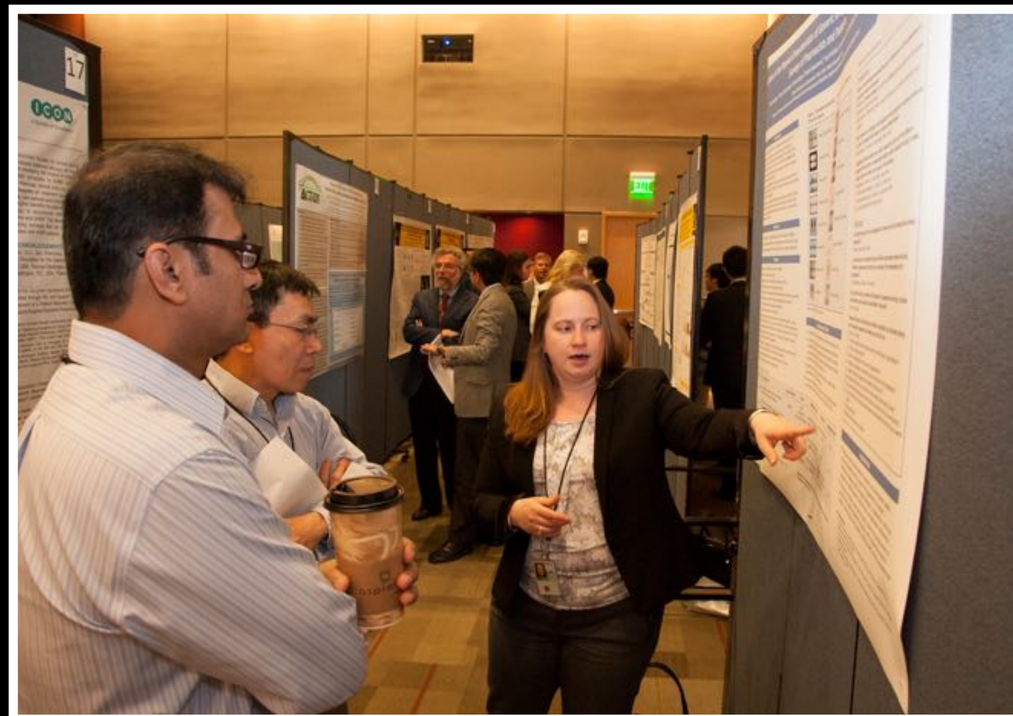
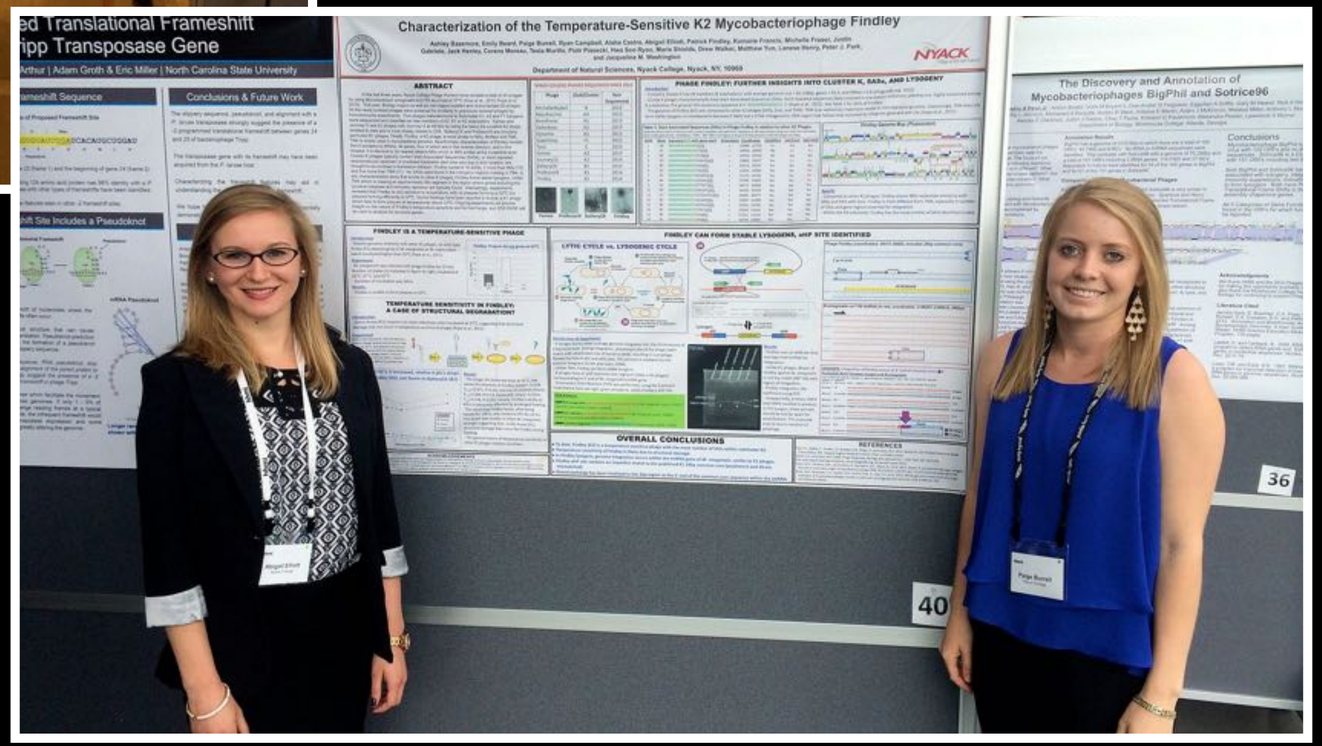
Grade 3

Science


Door is
Blocked
UHV 3500
LEED
DO NOT MOVE


Results
Summary


17


Characterization of the Temperature-Sensitive K2 Mycobacteriophage Findley
NYACK
ABSTRACT
Conclusions & Future Work
OVERALL CONCLUSIONS
The Discovery and Annotation of Mycobacteriophages BigPhil and Sotrice96
40
36

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Gabriele, Jack Henley, Corens Moreau, Tesla Murillo, Piotr Piasecki, Hwa Soo Ryoo, Maria Shields, Drew Walker, Matthew Yun, Lanese Henry,
and Jacqueline M. Washington

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Evidence - Observe - Measure

NYACK COLLEGE PHAGES SEQUENCED SINCE 2012

Phage	(Sub)Cluster	Year Sequenced
MichelleMyBell	N	2012
BabyRatchet	A3	2013
BeesKnees	A1	2013
DaHudson	A3	2013
Dynamix	A1	2013
SuperGrey	F1	2013
Tuco	E	2013
Fameo	A2	2014
Journey13	A2	2014
BatteryCK	B1	2014
ProfessorX	B1	2014
Findley	K2	2014

PHAGE FINDLEY: FURTHER INSIGHTS INTO

Introduction

- Currently, Cluster K has 48 members (6 subclusters), with average genome size = 60,148bp, g
- Cluster K phages characteristically have Start Associated Sequences (SASs, short repeated seq
K subclusters, the general SAS consensus sequence is 5'-GGGATAGGAGCCC-3' (Pope et al., 201
- The genome of Findley (K2) was compared to other K2 phages (Milly, Zoe), and TM4). TM4 is a

Table 1. Start Associated Sequences (SASs) in Phage Findley in relation to other K2 Phage

SAS#	Gene	Sequence (5'-3' with gene start)	Orientation	Coordinates	SAS(MRSA)	SAS(Zoe)	SAS(
1	29	[illegible]	+	22695..22703	Yes	Yes	Y
2	37	[illegible]	+	28948..28963	Yes	Yes	Y
3	38	[illegible]	+	29414..29426	Yes	Yes	Y
4	39	[illegible]	+	29880..29892	Yes	Yes	Y
5	40	[illegible]	+	30319..30331	Yes	Yes	Y
6	42	[illegible]	-	32054..32066	Yes	Yes	Y
7	43	[illegible]	+	32170..32182	Yes	Yes	Y
8	44	[illegible]	+	32990..33002	Yes	Yes	Y
9	53	[illegible]	+	38672..38684	Yes	Yes	Y
10	69	[illegible]	+	44692..44704	Yes	Yes	Y
11	73	[illegible]	+	46065..46077	Yes	Yes	Y
12	82	[illegible]	+	52087..52099	Yes	Yes	Y
13	86	[illegible]	+	53824..53836	Yes	Yes	Y
14	87	[illegible]	+	53924..53936	Yes	Yes	Y
15	90	[illegible]	+	55231..55243	Yes	Yes	Y
16	92	[illegible]	+	56094..56106	Yes	Yes	Y

FINDLEY IS A TEMPERATU

troduction

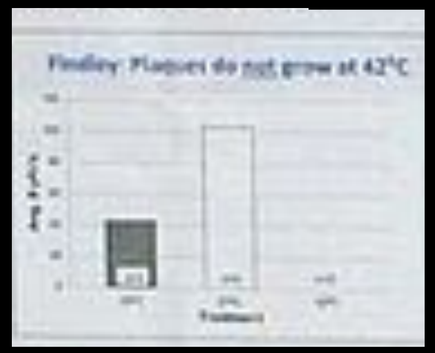
espite genome similarity with other K1 phages, no wild ty
aya (K1) plaques grow in M. smegmatis or M. tuberculosis
ere incubated higher than 37°C (Pope et al., 2011).

periment

M. smegmatis was infected with phage Findley for 15 min.
umber of plates (n) indicated in Figure on right, incubated a
°C, 37°C, and 42°C.
Duration of incubation was 36hrs.

sults

Findley is unable to form plaques at 42°C.

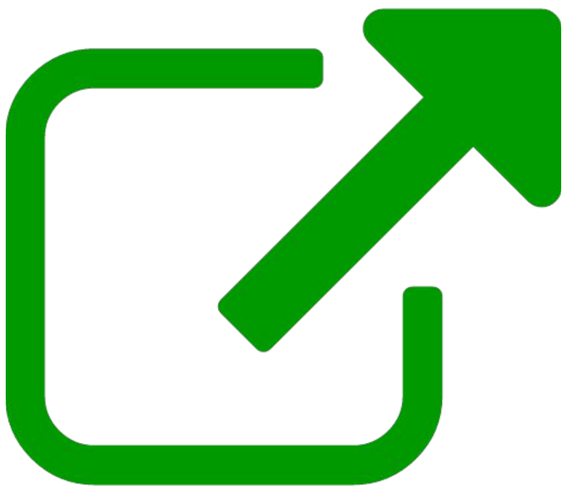


TEMPERATURE SENSIT
A CASE OF STRUCTURAL DEGRADATION?

troduction

Some Araya (K1) mutants can retain infectivity when incubated at 37°C, suggesting that structural
amage may not occur in temperature sensitive K phages (Pope et al., 2011).

Animal Groups



Cause
Effect

Engaging in
Argument
from Evidence

Question

Question

Evidence

Data

Claim

Answer

Evidence

Data

Question: How does living in groups affect the survival of whales ?

Our **Claim**:

Our **Evidence**:

Whales

Question: How does living in groups affect the survival of whales ?

Our **Claim**:

Our **Evidence**:


BBC

Question: How does living in groups affect the survival of whales ?

Our **Claim**:

Our **Evidence**:

Ants

Question: How does living in groups affect the survival of ants ?

Our **Claim**:

Our **Evidence**:

Question: How does living in groups affect the survival of ants ?

Our **Claim**:

Our **Evidence**:

Prairie

Dogs

Question:

How does living in groups affect the survival of prairie dogs ?

Our **Claim**:

Our **Evidence**:

Question:

How does living in groups affect the survival of prairie dogs ?

Our **Claim**:

Our **Evidence**:

Reading Passages