The background of the slide features several interlocking gears of different sizes. The gears are dark silhouettes against a bright, hazy background that transitions from a light blue at the top to a warm, orange-yellow glow at the bottom, suggesting a sunrise or sunset. The gears are positioned in the foreground, with some appearing more prominent than others, creating a sense of depth and mechanical complexity.

Evolving our thinking on the knowing-doing gap in managing invasive species

Ingrid M. Parker

Ecology & Evolutionary Biology
University of California, Santa Cruz

“New perspectives”

Evolution affects
our predictions of
invasion dynamics
& impact



Nicky
Lustenhouwer
&
Dittrichia
graveolens

Cytisus
scoparius



Metabarcoding
allows us to study
interactions
between invaders
and soil
microbiomes

“New perspectives on the interface between
research and management”



Thanks for the inspiration...

“Keys to enhancing the value of invasion ecology research for management”
(in review)

Jennifer Funk,
Ingrid Parker,
Virginia Matzek,
Luke Flory,
Erik Aschehoug,
Carla D’Antonio,
Wayne Dawson,
Diane Thomson,
Justin Valliere



Jennifer Funk
Chapman University



Jeffrey Foster & Nancy Benson
Joint Base Lewis-McChord, WA



Kerstin Wasson,
Research Coordinator at Elkhorn Slough NERR

The “Knowing-Doing Gap”

= when scientific knowledge does not translate into meaningful action

2014

LETTER

Closing the Knowing–Doing Gap in Invasive Plant Management: Accessibility and Interdisciplinarity of Scientific Research

Virginia Matzek¹, Justin Covino¹, Jennifer L. Funk², & Martin Saunders¹

¹ Department of Environmental Studies & Sciences, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053, USA

² Department of Biological Sciences, Chapman University, Orange, CA 92866, USA

Conservation Letters

2015

Open Access

A journal of the Society for Conservation Biology

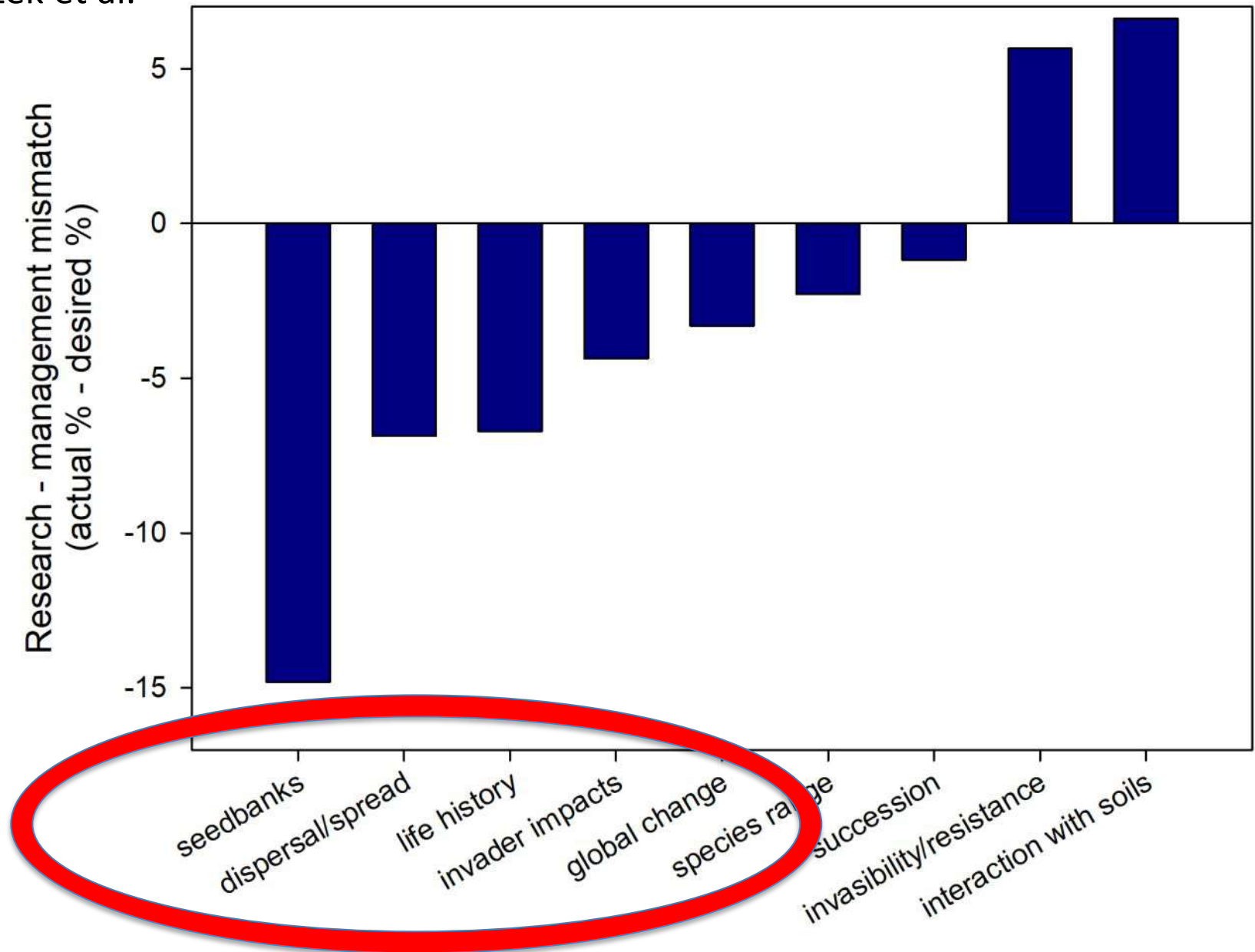
LETTER

What Managers Want From Invasive Species Research Versus What They Get

Virginia Matzek, Maile Pujalet, & Sophia Cresci

Department of Environmental Studies and Sciences, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053, USA





Research is most likely to be useful
when academics and managers
design projects **together**.

How can we make that happen more often?

How can we make that happen more often?

Let's focus on understanding and supporting our respective goals

Evolving our thinking on the knowing-doing gap in managing invasive species



Academic Goals

Management Goals

As a **PRACTITIONER**,
What **GOALS** motivate you to partner
with an academic scientist?

As an **ACADEMIC SCIENTIST**,
What **GOALS** motivate you to
partner with a practitioner?

5

Minutes Left

4

Minutes Left

3

Minutes Left

2

Minutes Left

1

Minute Left

30

Seconds Left

Time is Up!

Get Ready

Academic Goals

Opportunity for novel discovery,
publication of results

Access to field sites and other
resources needed to pursue
questions

Access to practical knowledge about
and experience with species, sites,
patterns

Access to new sources of funding
(e.g. local and regional organizations,
DOD)

Communication to researchers,
managers, and the public

New relationships leading to new
opportunities

Management Goals

Development of effective science-
based management practices and
management priorities

Access to increased bandwidth in
labor and skills to fill knowledge gaps

Access to reliable knowledge about
species, context-dependency

Access to new sources of funding
(e.g. NSF, USDA)

Communication to diverse
stakeholders

New relationships leading to new
opportunities



RESEARCHER

Grad student starting
Broom pollination project

MANAGER

Staff provide access to field
sites and species knowledge



Inger Gruhn



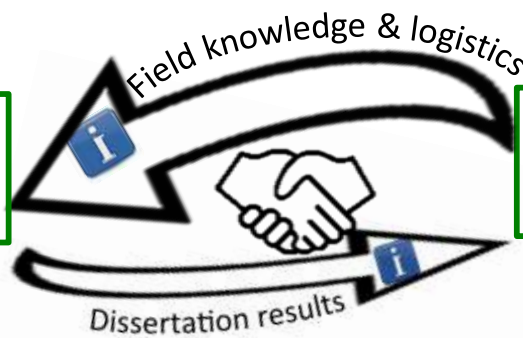
Joe Reasoner

RESEARCHER

MANAGER

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Broom pollination project

Staff provide access to field
sites and species knowledge



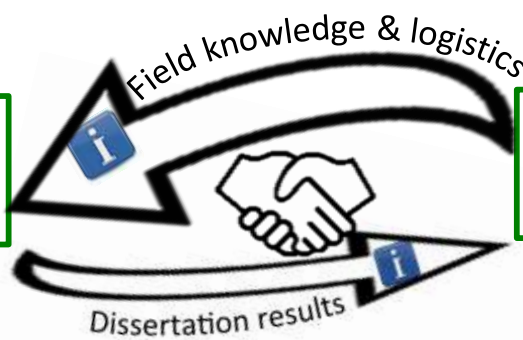
Publications

RESEARCHER

MANAGER

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Staff provide access to field
sites and species knowledge



Publications

Staff identify research
problem on broom invasion
in forestry



Jeff Foster



Nancy Benson

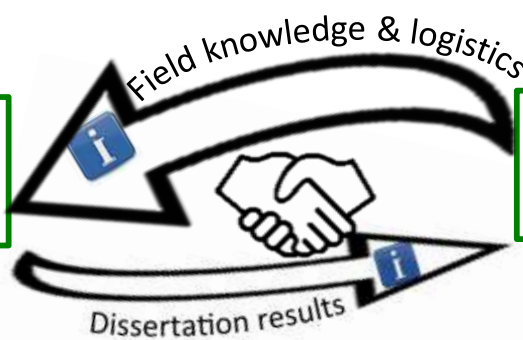


RESEARCHER

MANAGER

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Publications

Staff identify research
problem on broom
invasion in forestry

Professor assembles
a team of students
& collaborators

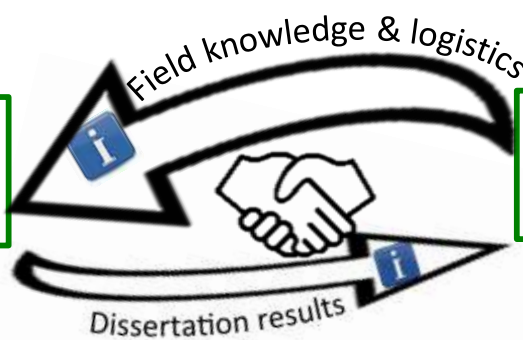


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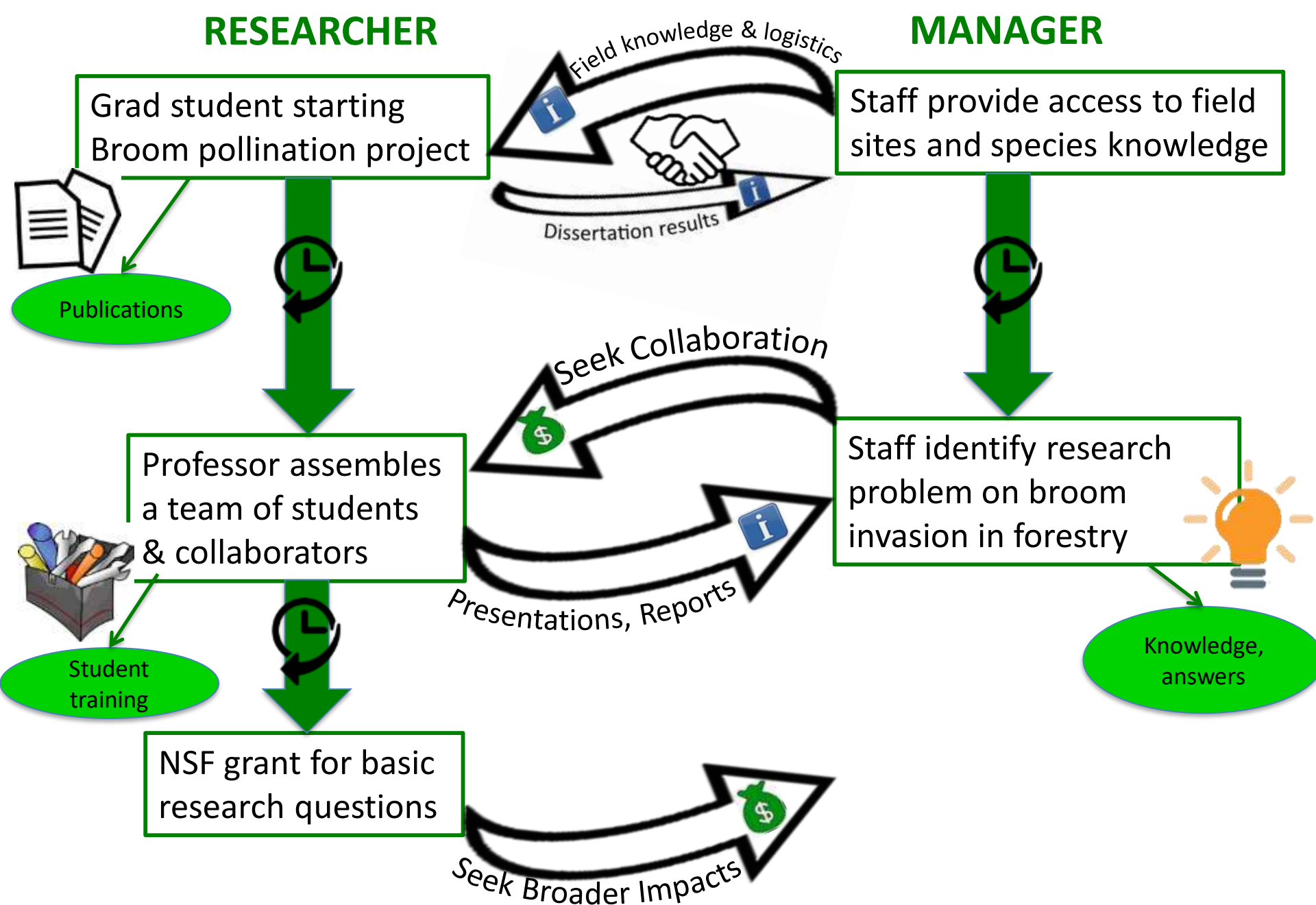
Student
training

Knowledge,
answers



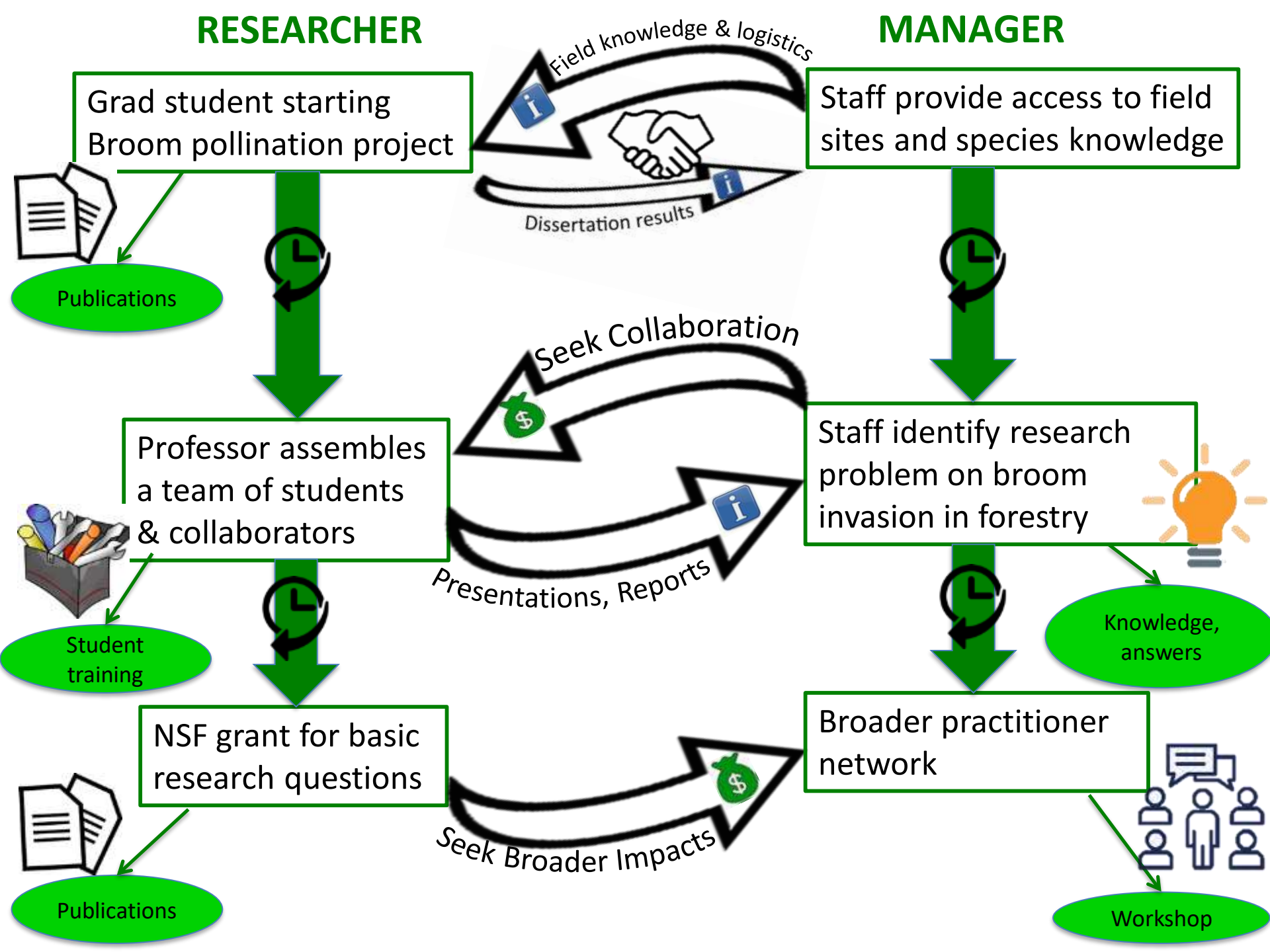
RESEARCHER

MANAGER



RESEARCHER

MANAGER



LESSONS LEARNED: My most important contributions to management

1. = ACCIDENTAL DISCOVERIES

2. Things that DON'T MATTER (e.g. spray timing, stump height)

3. Things that work BETTER THAN YOU EXPECT

Herbicide spray on seedlings

Herbicide spray through thick grass thatch

4. Details that a practitioner might not have TIME to figure out

Timing of when things happen (e.g. tree mortality)

Follow individuals

5. Things that sound good on paper but ARE RIDICULOUS when you try to implement them

(e.g. scarifying soil to kill seedlings)

LESSONS LEARNED: My most important contributions to management

“S.M.A.R.T. goals”?

Specific, Measurable, Attainable, Relevant and Timely

Don't be a slave to SMART goals

...because relationships are as important as goals.

RESEARCHER



MANAGER



***Generosity is the best
investment.***

Diane von Furstenberg,
fashion designer

Dave Kotinsky, Getty Images





Image:
givingcompass.org

Evolving our thinking on the knowing-doing gap in managing invasive species

