A quick guide to navigating
Your first job.
Your own first lab.
Your first “real” problems.

Max Teplitaski
University of Florida
A novel idea is not enough

  • Plants secrete substances that mimic bacterial N-acyl homoserine lactone signal activities and affect population density-dependent behaviors in associated bacteria.
    • Cited 174 times.

  • Extensive and specific responses of a eukaryote to bacterial QS signals
    • Cited 119 times.

– Rajamani et al., MPMI, 2008
  • The vitamin riboflavin and its derivative lumichrome activate the LasR bacterial quorum-sensing receptor
    • Cited 10 times
A novel idea is not enough

- 4 articles on QS inhibition
- 11 articles
- 22 articles
- 32 articles
- 61 articles
- 95 articles
- 143 patents

Timeline:
- 2000
- 2002
- 2004
- 2006
- 2008
- 2010

1st patent
Outline

• To compete or not compete? Is there a 3rd way in science?
• Strategy vs tactics.
• Structuring the team: do personalities have to collide?
• Job interviews: is it the same from both sides of the table?
• Conflict management: how to comfortably conduct uncomfortable conversations.
• Messages that motivate
To compete or not compete?
Is there a 3rd way in science?
# Blue Ocean Strategy

<table>
<thead>
<tr>
<th>Red Ocean</th>
<th>Blue Ocean</th>
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</thead>
<tbody>
<tr>
<td>Compete in existing market space</td>
<td>Create uncontested market space</td>
</tr>
<tr>
<td>Focus on competing. Success: beating the competition</td>
<td>Make the competition irrelevant</td>
</tr>
<tr>
<td>Exploit existing demand</td>
<td>Create and capture new demand</td>
</tr>
<tr>
<td>Make the value-cost trade-offs</td>
<td>Break the value-cost trade-offs</td>
</tr>
</tbody>
</table>
Examples
Research Project Management Philosophy

The strategy canvas of Cirque de Soleil

Eliminate  Reduce  Raise  Create
Examples
Is the “Blue Ocean strategy” relevant in science?
Toward the Blue Ocean of Science: goals, strategy, tactics

• **Goal setting**
  – Focus on the outcome: what do you want to achieve?
    • A *Science* paper?
    • A well-funded research program?
    • A research/education/extension program?
    • A service lab?
    • A program that allows you to travel and just be curious?
Strategy

• **Strategize.**
  – Do your homework!
  – Identify and analyze competition
    • Focus of their program
    • Workflow
    • Sources of funding
    • Journals where they publish
    • Do not compete on their turf
    • **Eliminate, Reduce, Raise, Create**
Strategy

– Identify beneficiaries of your discoveries
  • Develop a product that meets their needs
  • Deliver *tangible* results
  • Focus your research program on testing hypotheses
  • Do not turn into a service lab, unless that is your goal

– Structure your funding portfolio
  • Diversify without over-extending resources
  • Have a unique tool set, but invest wisely in tool building
  • Employ versatile tools

– Analyze workflow
  • Try different models
Strategy

– Shape science
  • Scientists want to be fashionable too!
  • Volunteer for grant panels, journal editorial boards
  • Publish research and review, opinion articles

• Develop a tactical plan
Strategy vs tactics

• Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat.
  - *Sun Tsu* (6th century b.c.e.)

• In strategy it is important to see distant things as if they were close and to take a distanced view of close things
  - *Miyamoto Musashi* 1584-1645
Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat.

A set of **purposeful** tasks and actions to achieve the goal.

An idea, a concept that will achieve the goal and guide tactics.
Why strategize?

• Goals
  – Create focus
  – Create an in-group identity
  – Help define strategy (-ies)

• Strategy
  – Guides planning
  – Develops metrics for feedback
  – Drives innovation
  – Helps identify
    • Resources
    • Training needs
    • Areas to **Eliminate, Reduce, Raise, Create**
Your research group: do personalities need to collide?

• Goals
  – Create focus
  – Create an in-group identity
Your research group: do personalities need to collide?

• Goals
  – Create focus
  – Create an in-group identity
    • “Social identity theory” formulated in the 1970-80’s by H. Tajfel and J. C. Turner
    • “Us” (in-group) vs “they” (out-group)
    • Strong in-group identity could lead to increased productivity
Team vs. functional group

• Team
  – 2+2 >4
  – success and responsibilities are interdependent
  – strong shared social identity
  – often self-managed

• Group
  – 2+2=4
  – responsibilities and contributions of individuals are clearly defined
  – strong shared social identity is not required
  – require manager, leader
Team vs. functional group

- **Team**
- **Group**
Team vs. functional group

- “Teams” are romanticized
- Teams do not form on demand
- Cost-benefit analysis of “team building”
- Teams are productive, but could be hostile to change and outsiders
Your research group: do personalities need to collide?
Your research group: do personalities need to collide?

• Meaningful diversity is a must
  – backgrounds and experiences,
  – personalities,
  – skill sets,
  – approaches to problem solving,
  – approaches to managing conflict and conflict resolution
Your research group: do personalities need to collide?

• Meaningful diversity is a must
  – Personalities, problem solving skills
    • DISC Profile
    • Myers-Briggs Indicator
    • Herrmann Brain Dominance Instrument
    • Kirton’s Adaptation-Innovation Instrument
DISC

• Psychological inventory tool based on the 1928 work of W. M. Marston
• Dominance
  – Control, power, assertiveness
• Influence
  – Social situations and communications
• Steadiness
  – Patience, persistence and thoughtfulness
• Compliance
  – Structure and organization
15 DISC profiles: examples

- Persuader
- Promoter
- Objective thinker
- Perfectionist
Job interviews

• Screening
• Behavioral
• Stress
• Informational
• Group meal
Behavioral interview

• Identify skills that are important for a tactical approach
• Look for a 2-dimensional validation of answers
  – *Time management*
   • Your resume lists membership in 10 clubs, two concurrent part-time jobs and also a volunteering experience. That is impressive! You must have figured out how to multi-task. Please, tell me what your secret of successful multi-tasking.
  – *Commitment*
   • Please tell me about a project you started and didn’t finish. Why?
  – *Dealing with conflict*
   • Please give me about your best boss... and your worst boss.
  – *Motivation*
   • What is the most boring repetitive task you have ever done. How did you keep yourself interested/motivated while doing it?
• Do not seek uniformity!
Behavioral interview

• Prepare for the interview!
• Don’t over-do on the “background” research (or if you do, don’t show it!)
• Resume
  – Forgo the chronology, focus on skills
  – List quantifiable, relevant accomplishments
• Don’t say the things *you think you should be saying*
Group meal interview

• Interview rules still apply
  – To you and to your hosts:
    • Not OK to be abusive, prejudiced, gossipy
    • If you are becoming uncomfortable, say so!

• Be yourself!
Job interviews

- Screening
- Behavioral
- Stress
- Informational
- Group meal
Uncomfortable Conversations

Kelly Patterson
Joseph Grenny
Ron McMillan
Al Switzler
Uncomfortable Conversations

• What is your BIG goal?
• Ask yourself: what do you want and what don’t you want
• Do not jump to conclusions and make assumptions
• Do not pass the buck
• Do not play read my mind
Uncomfortable Conversations

- Describe the gap
- Establish safety
- End with the question
Uncomfortable Conversations

• Describe be gap
  – Start with facts
  – Offer tentative conclusions
  – Watch for safety problems
• Establish safety

• End with the question
Uncomfortable Conversations

• Describe the gap
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• Establish safety
  – Ask for permission
  – Speak in private
  – Mutual respect
  – Shared goals
  – Contrasting
    • State what you do and don’t mean
    • Address attribution errors, but don’t get sidetracked

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Uncomfortable Conversations

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• End with the question
  – “What happened?” vs “What’s wrong with YOU?”
  – Listen
Ask and Listen

- Ask
- Mirror
- Paraphrase
- Prime
- Agree when you do
- Build
- Compare
A path to solutions

• The motivation issue:
  – Three approaches to avoid
    • Charisma
    • Power
    • Perks
• Jointly explore barriers
• Avoid Quick Advise
  – Start by asking for ideas and solutions
  – Don’t pretend to be involved
  – Don’t feel the need to have all the answers
• Make it safe for others to search
• Stay focused and flexible
• Move to action
Motivation and Commitment

• Factors that satisfy vs those that motivate
  – Satisfiers
    • pay, relationship with supervisors, peers, etc
  – Motivators
    • Sense of personal satisfaction, opportunities to do creative work, responsibility

• Individual differences

• Intrinsic motivation
Messages that motivate

• Fixed mindset vs growth mindset
  – Carol Dweck

• Fixed mindset:
  – I am who I am. I can only achieve to the extent of my abilities

• Growth mindset:
  – Intelligence is like a muscle. It can be developed
Messages that motivate
