Outline

What I Do

How I Got Here

Thoughts on this career path (compared to research)
What I Do

Run a web site (physics.aps.org) that promotes research in the APS journals *(Physical Review Letters, Physical Review)*

Some freelance writing
Synopsis: A Quantum Machine Made of Ions
February 6, 2014
Experiments with trapped ions could prove that a quantum machine can churn through a calculation faster than a classical one.

Viewpoints

Encouraging Signs on the Path to Fusion
February 5, 2014
Steven J. Rose
By adopting a new strategy toward laser fusion, researchers at the National Ignition Facility have produced the highest energy output to date.

Thermal Cloaks Get Hot
February 3, 2014
Andrea Alù
Two experiments show that metamaterials can shape the thermal distribution around an object, eliminating its disturbance of the thermal flux.

Taking the Pulse
January 29, 2014
Carlos R. Laing
A new mathematical model allows the description of ensembles of biological oscillators coupled by short pulses, like neural networks.

Synopses

To Exploit or Explore, That is the Question
February 5, 2014
A compromise between exploitation of known resources and exploration of new ones may be the best strategy for optimizing growth in a broad range of real-world situations.

Clearer Quantum Vision
February 4, 2014
The use of quantum states of light can enhance the resolution of bioimaging techniques.

Focus

Turbulence Can't Stir Plankton
January 31, 2014
Turbulence causes certain swimming microorganisms to segregate into clusters, rather than spreading out evenly, according to experiments and simulations.

Protein Physics of Pruney Skin
January 24, 2014
A thermodynamic model explains how the unique packing of protein filaments in skin allows it to absorb water and expand.

Fighting for Attention
January 30, 2014
Competition for attention among users can bring social networks close to the critical point of a phase transition.

Notes from the Editors

Looking for the Invisible at Colliders

Keep Up With Physics

American Physical Society Sites
Intended Audience

Physics community

Students

Science writers/journalists*

Scientists in other fields

*Weekly tip sheet to journalists provides simpler summaries of what we cover in Physics.
physics.aps.org: Running a weekly web magazine

- Find new results worth covering
- Decide how best to cover new results (news story, expert commentary, editor summary)
- Find experts to write commentaries/edit their articles for readability
- Write summaries about papers/edit summaries from editors
- Maintain steady pipeline of content
- Manage staff of editors, freelance writers and illustrators
- Coordinate with authors, press officers
- Social media
- Attend conferences
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Looking for Exciting Results
What Physics Looks For

• Solves a long standing problem
• Advances the field/opens new questions
• Intrinsically interesting
• Applications/physics you can relate to
• Multidisciplinary
• Technically sound (to the best of our knowledge)
• A clear message that can be explained to a broad audience
• Good story
Some Numbers

*PRL* publishes 70 papers/week

*Physical Review* publishes ~ 200-250/week
Observation of a Charged Charmonium-like Structure in $e^+e^- \rightarrow \pi^+\pi^- J/\psi$ at $\sqrt{s} = 4.26$ GeV

New Particle Hints at Four-Quark Matter
Tips

- Journal editors
- Author summaries
- Awareness from conferences, reading
Editing Commentary (Viewpoint) Articles
What we ask the writer to do:

“Explain new research result to the non-expert (students, science communicators, physicists/scientists who work in other fields.) Why is it exciting for the field?”
Common pitfalls

#1 Not stating the main message in a simple (direct) way.
#2 Too much background information.
#3 Forget to say what the authors did.
#4 Dense language, too much passive voice.
#5 Include info that only a specialist would consider important.
Why is it hard to write about research?

• Physics (and science in general) is exploratory and messy

  Great findings are often made by accident.
  You are rarely the first to do anything.
  Hard to wrap up in a neat bow.

• You know a lot, you care a lot.

• Physics is really specialized: We get lazy and use short-hand for concepts, rely on acronyms.

• Scientists want to be precise, often at the expense of clarity.
#9 “if an issue is tangled like a plate of spaghetti, then regard your story as just one strand of spaghetti, carefully drawn from the whole.

Ideally with the oil, garlic and tomato sauce adhering to it.

The reader knows life is complicated, but is grateful to have at least one strand explained clearly.”
Writing Summaries/News Stories
Questions I ask myself:

• Why do researchers care about this?
• Why would a non-specialist care about this?
• What did the authors do?
  Can I draw the experiment or how they set up their simulation?
  What did they measure or calculate?
  How is it new compared to previous work?
• What terminology do I have to explain?
After Reading 2000 Papers, a Wish List from an Editor

Build the paper around the figures. Do the figures tell a story?

Keep the introduction concise: Get to the point.

Make the “what you show” and “why it’s of interest” clear.

A simple explanation of the set-up/calculation strategy is always helpful.

A clear cover letter is a wonderful thing.
Different Audiences You’ll Need to Reach
(Who Won’t Know Much About What You Do)

• Students
• Potential employer/tenure committee
• Collaborators (sometimes in different fields)
• Funding agent
• Editor
• Public information officer or journalist
(built by UIUC Professor Peter Abbamonte)
Research Skills I Use

Speaking the lingo

Familiarity with the research culture/personalities

Back of envelope calculations

Separating the wheat from the chaff
Research Skills I Never Use

An ability to:

Wheel a tank of liquid nitrogen down a steep parking lot.

Live on vending machine peanuts for 3 days.

Calculate my h-index.
New Skills I Had to Learn

Time management (deadlines, deadlines, deadlines)

Getting to the point

Thinking broadly

People management

Efficient problem solving (not the Clebsch-Gordan coefficient kind)
Comparison

More regular hours, but work is more intense/relentless

Comparable to research, more stability

Job change will require you to think outside the box.
Related Jobs

Editor (manuscripts, commentaries, news)

Publishing (new journal or book ideas)

Media relations/Public Information Officer

Outreach and Education

University or R&D administrator

Science writer (staff or freelance)
Thank You

Physics Staff

Matteo Rini  David Ehrenstein  David Voss

Write to us with feedback:
physics@aps.org
jthomas@aps.org

@APSPhysicsEd  APS Physics