**Panel Biographies**

**Larry Hornak** is a Professor and Associate Dean for Research in the College of Engineering; his faculty appointment is within the School of Electrical and Computer Engineering.  His research interests include photonic devices; integrated optics, including novel inorganic and organic guided wave devices; and sensor systems, including biophotonic integrated sensors, multispectral and biomolecular biometric identification. Dr. Hornak has over 30 years of experience in industry, academic research, and government, where he served as an NSF Program Director. He has received funding from Army, the Office of Naval Research (ONR) and NSA and recently completed a multi-university DARPA-funded project to create an “Improvised System for Defeating Shortwave Infrared Face Recognition.”

**Tina Salguero** is an Associate Professor in Department of Chemistry. Her group focuses on hybrid materials that incorporate nanosheet components, which are isolable and can be manipulated and assembled in a controlled fashion, and exhibit excellent strength and stiffness properties and high thermal stability. Example applications include barrier materials for electronics, energy storage materials for batteries, and electrically conductive materials for fuel cells, and current-dissipating materials on aircraft to provide protection against lightning strikes. She has received funding from the Office of Naval Research for research related to the fabrication of these nanomaterials, and from the Defense University Research Instrumentation Program (DURIP) for microscopy related to their fabrication. In previous industry work, she also had DARPA funding.

**Jack Huang** is a Professor in the Department of Crop and Soil Sciences within the College of Ag and Environmental Sciences. His research interest focuses on catalysis involved in the environmental transformation of organic pollutants, and development of catalysis-based technology for pollution control and environmental remediation and management. This includes enzyme-based technology for water treatment and soil remediation, electrochemical processes in wastewater treatment, catalysis in biofuel production, and environmental applications and implications of nanomaterials. He has received funding for this work from the US Department of Defense Strategic Environmental Development Program (SERDP) and Air Force Civil Engineering Center (AFCEC).

**Eric Lafontaine** is a Professor in the Department of Infectious Diseases in the College of Veterinary Medicine. His research program consists of countermeasures for the bacteria such *Burkholderia mallei* and *Burkholderia pseudomallei*.  These organisms cause highly fatal respiratory infections and are classified as Tier 1 Select Agents of bioterrorism, which is the highest threat level. He was funded by DOD, more specifically the Defense Threat Reduction Agency (DTRA), for 8 years through 1 grant and 2 contracts between 2008 and 2016.  He is currently working on a project funded by NIH to develop novel vaccine platform for *Burkholderia*.

**Helpful links based on panel discussion:**

* [Federal Business Opportunities: Home](https://www.fbo.gov/)
* [AFCEA International | Bringing Government and Industry Together Since 1946](https://www.afcea.org/site/)
* [The Heilmeier Catechism](https://www.darpa.mil/work-with-us/heilmeier-catechism)

**DISCUSSION NOTES**

**Larry**

* Biggest distinction is that DoD is mission-driven rather than research-driven
* This is obvious when talking to PDs--what will be the impact of the work?
* Articulate your objectives using absolutely no jargon, based on Heilmeier Catechism:
  + How is it done today?
  + What are limits to current practice?
  + What’s new in your approach and why do you think it will be successful?
  + Who cares?
  + If it works, what difference will it make?
  + How long it will take?
  + How will it impact their mission--your ‘customer’ is this program, how will you help achieve mission?
* Convey impact concisely. No jargon.
* Quad chart is extremely important.  Used for ‘go’ or ‘no go’ decisions
* Important to do these things whether it’s a white paper or an RFP
* Include quad chart in emails with PDs
* Challenge is initiating communication with a PD
* Best path – email PD (including quad chart), conversation, invitation for white paper, positive response, full proposal
* They really don’t want to see a white paper without previous conversation Share chart and then they may request white paper
* Don’t submit a full proposal unless you’ve submitted a white paper and had positive response (this does vary from program to program)

**Tina**

* From the outside it can be very difficult to know what an agency might want to fund
* Even when there is a CFP, there are topics of interest but IME, by the time you see those calls it’s already too late--teaming has already happened and it’s almost too late--have to build relationships with PO/PDs first

**Jack**

* Strategic environmental R&D experience
* DoD has a major interest in environmental research related to their work
* First grant in 2010, emerging contaminants
* Two types of grants, exploratory or bigger in scope, high risk high reward research (standard is higher, but more funds)
* Now they are thinking about industry partner consortia on these contaminants, and Jack partnered with a company
* Exploratory project is good to start with, involves starting to build relationships with POs
* Was not already connected with companies when he submitted the first time
* After getting first grant, companies approached him

**Eric**

* Positive experience but had to make some adjustments
* Previously NIH-funded
* Have to be very direct in proposal language and keep in mind they’re interested in ‘deliverables, deliverables, deliverables’
* Adjustments were mostly administrative--you can submit a white paper and not hear about it for a year, year and a half, and suddenly they contact you saying we are going to fund you
  + Quarterly financial and research reports to submit
  + Financial reporting structure/framework--different from NIH/NSF but DTRA would piecemeal it, specific acronyms/numbers associated with each disbursement, have to be extremely careful reporting on it, if you make a mistake it takes a lot of effort/anxiety to get it fixed
* Yearly review, had to go to DTRA and present year’s progress to secure next year’s funding
  + Had to be extremely well-prepared for meeting, possible for funding to end
  + At meeting, negotiate funding and plan of work for year to come

**Larry**

* Immediacy—example of talking at a conference, asked to go to hotel room and come back with quad chart, $500k budget
* Invigorating but immediacy is different from other agencies
* Year-to-year funding is all over the place
* You have to be responsive and adaptable to changes in funding
* Good to have this funding in your stable of funding sources
* Do not ignore the contractor/assistant person (e.g. not the PD, but they are the ones doing all the work for the PD), build that relationship too

**Eric**

* Strong restrictions on how you can relate the funding to other work going on in your lab
* Have to be extremely precise--account for every penny
* Restrictions regarding publications, everything has to be submitted ahead--if you are going to present on the work, they have to approve the content, approve manuscripts in preparation

**Larry**

* These restrictions depend on funding agency and solicitation
* Some POs tried to structure so you’d have fewer restrictions

***Audience question****: How important is TS clearance as barrier to funding?*

**Cathy**: Only 2 people on campus with such clearance, so not seen as a barrier

***Audience question****: GA Tech has a lot of classified research and more clearance; ⅓ size but 9 times funding*

**Larry**

* Infrastructure associated with doing this as Tech does, critical mass
* Ability to deal with information that is classified--some institutions much better equipped like GTRI
* SCIF is a special environment for doing extensive defense research

**Cathy**

* Need large investment in electronic data infrastructure for dealing with classified info

***Audience question****: What is peer review role in DoD review process?*

**Eric**

* There are not lengthy summary statements but there is a peer review process

**Jack**

* Technical Advisory Committee--that’s who you present to, they make decision about whether it fits their interests
* Impression that DoD is more closed-door, but once I ‘got in’ I can’t understand where that impression comes from
* People who have done research with DoD tend to keep getting money from them
* Less about who you know, more about technical/mission
* In TAC meetings you know what they’re concerned about, it is not a mystery
* More about research than relationships with them

**Tina**

* I agree with that statement
* Never received any reviews for the proposal she got funded
* Sure that it went through peer review, but wasn’t a big deal the way it was with NIH/NSF

**Larry**

* Also never got a review back from DoD, you get a call that you’re funded or you’re not
* POs know their business, they’re out at conferences, they know technically where the cutting edge is
* Looking for innovative idea, but how is it going to advance the ball down the field

***Audience question****: How do you recommend forming relationships with POs? Conferences, emails?*

**Tina**

* Cold called a PO by email, then phone conversation is what’s important

***Audience question****: How do you get in the door?*

**Eric**

* Didn’t have a contact when first submitted, just submitted a proposal that was ‘right on the money’

**Larry**

* Some of my contacts came from immersion, conferences--not just research, but conferences where DoD are present and talking about their issues

**Tina**

* Sending email with nugget of your revolutionary idea--POs do look at these. If they’re interested, they will contact you

**Larry**

* Joint agency conferences
* E.g. medical warfighter protection conferences
* Industry days

**Eric**

* Quad charts! Speaking their language

***Audience question****: We all frequently attend conferences; are these conferences you’re talking about open to public? How would we look those up? Second, as far as initial contact goes, I can look up NSF’s program mission but is there similar info in DoD?*

**Eric**

* Yes (second Q)--BAAs, stated agency missions

**Cathy**

* DoD sometimes puts out so much information but if you’re willing to comb through it, may even find funded abstracts

**Larry**

* AFCEA, for-profit institutions that runs all these conferences--military people, PDs, some academics and industry people--all public things being discussed
* Will be talking about challenges to the extent they can talk about them
* Seeing you there helps form relationship
* Quad chart, white paper, proposal

**Eric**

* Takes more time to craft a quad chart than a full proposal--want to convey points very clearly

**Sample quad chart**

|  |  |
| --- | --- |
| Picture | Problem |
| Approach | Milestones/cost |

***Audience question****: project management, having diverse funding sources, how do you manage your projects and personnel so as to scale with funding fluctuations?*

**Larry**

* Having grad students on set of activities rather than one activity

***Audience question****: Unlikely to hit bullseye first time around--how do I do better next time around?*

**Larry**

* Get face time, if they know what you’re doing you have better chance they’ll think of you

**Cathy**

* They only have to make BAAs available for 4 weeks, tight deadline, that’s why they’re already talking to people and assembling portfolio
* Reviewing work before BAA comes out--Casey Moll in public service

**Tina**

* DURIP (Defense University Research Instrumentation Program) instrumentation funding available to you if you have non DARPA DoD with good funding rates

For example, <https://www.grants.gov/web/grants/view-opportunity.html?oppId=292128>