



Integrity ★ Service ★ Excellence

AFOSR International Science Program Office

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AFOSR/IO**



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Overview



- **Changes at the International Science Program Office, IO**
- **Who we are**
- **What we do and plans for the future**



Changes in the past year



- “XOARDS” still exist but they have new names—IOE, IOA, IOS
- International office in Arlington, IO is now ION
- All four offices now work for IO which is co-located with IOE in London
- Lots of change to people/processes in one year; more to come



EOARD = IOE



SOARD = IOS



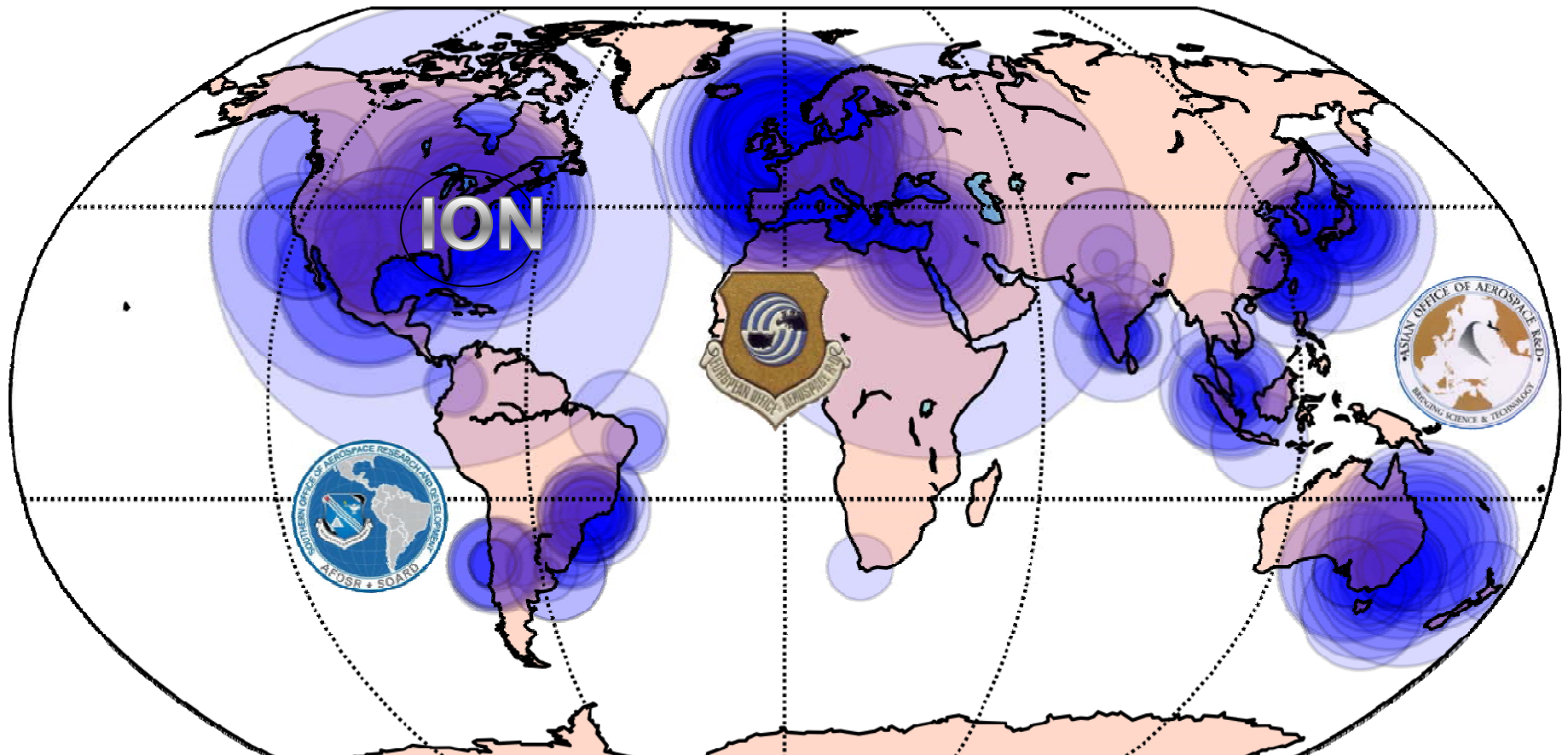
AOARD = IOA

ION Arlington = ION





IO Engagement



"Provide the US Air Force a strategy, awareness, and access to overseas basic research"



Thoughts on Strategy



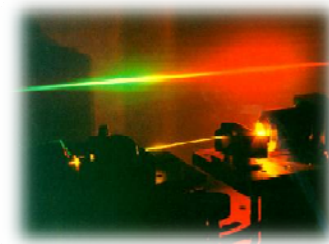
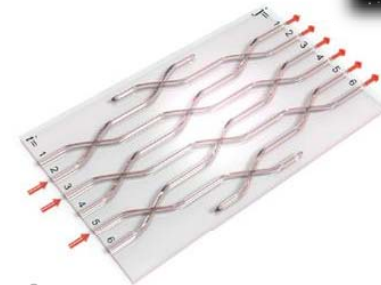
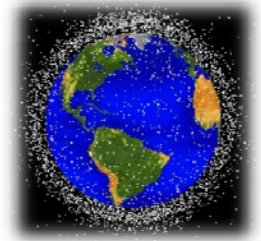
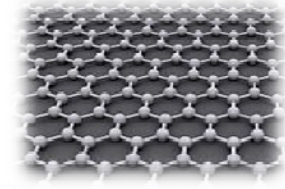
- **Assumptions:**
 - IO will contribute an international component to a robust AFOSR strategy for 6.1 research
 - Because of our location, we also have the *access* and *awareness* mission
- **Currently:**
 - *Strategy* exists primarily at the IPO/PO level; collaboration between intl office IPOs and Arlington POs highly encouraged
- **How do we do better?**



Scientific Strategic Drivers - EOARD



- **Europe strategy focused on technologies that cross multiple countries**
 - **Graphene**
 - Began at U. Manchester (UK) - now a worldwide research area
 - Nobel Prize in 2010
 - 10 yr. \$1B funding initiative for Europe
 - **Space Weather and Space Situational Awareness (SSA)**
 - UK, Norway, Belgium, Germany, & Ireland lead in EU activities
 - European Space Agency funds significant research activities
 - **Planning & Scheduling (Information Sciences)**
 - EU dominating this field at present
 - Switzerland, Germany, Israel, & UK lead in activities
 - **Quantum Information Science**
 - An emerging area of Quantum Photonics
 - Major advances through EU research centers
 - Oxford, Bristol, Heriot-Watt (UK) & U. Vienna (Austria)
 - **Ultraintense and Ultrafast Laser Physics**
 - Europe leads world in Ultra-High Intensity Laser research





Scientific Strategic Drivers--AOARD



Why: Strong economy, w/ growing Investments in Information, Space, Nano, & other Sciences.

What: Hypersonics
Aero. and Info. Sciences
Nano and Bio Technologies



Australia

Why: 3rd Largest economy and publisher of S&T papers. Growing emphasis in green innovation.

What: Green Innovation Energy
Machine Cognition
Theoretical Materials Sciences



Japan

Why: Gross Domestic Expenditures on R&D expected to reach 3.5% of GDP in 2012. Interconnected S&T community.

What: Biotechnology
Information Sciences
Physical Sciences



Singapore

Why: Large S&T Investment in Nanotechnology.

What: Nanoscience & Materials
Brain Science & Molecular Biology



Korea

Why: Converging Research Activities w/ U.S. in Nanosciences.

What: Nanotechnology
NanoBiotechnology
Information Technology



Taiwan

Why: Increasing Investment in Basic Research.

What: Information Technology
Aero & Material Sciences
Bio-Inspired Flight



India

Why: 2nd Largest Publisher of S&T papers. Strong in broad range of S&T areas.

What: Materials Science
Power & Energy
**Limited direct engagement*



China



Scientific Strategic Drivers--SOARD



Why: Strong human behavior/social sciences, and applied mathematics

What: Cognitive science/decision making
Theoretical Physics
Cyber



Argentina

Why: 8th Largest GDP and growing economy and publisher of S&T papers in Latin Am. Leader in bio-fuel research. 3rd largest Aero-industry in the world (EMBRAER)

What: Aero and Material Sciences
Bio-energy
Hypersonic
Mathematics
Space Sciences



Brazil

Why: Geographically located under magnetic equator and site world-class radio observatory.

What: Space Science



Peru

Why: Strong economy and highest GDP/capita in Latin Am. High Mts and dark skies are home of world-class space observatories. Geography (driest desert, geothermal activity, and Antarctica) provide unique variety for bio studies. Abundant mineral resources.

What: NanoBiotechnology/Extremophiles
Material Sciences
Physical Sciences
Space Sciences



Chile

Why: Second largest investor in S&T in Latin Am. 11th largest GDP in world. Growing S&T investment in National Laboratories system for graduate students research

What: Material Sciences
Nanotechnology
Energy Storage



Mexico



ION Programs



- **Engineer & Scientist Exchange Program**

- AF currently has 4 (soon to be 10) abroad, and hosting 4

- **Window-on-the-World (WOW)**

- 7 participants to 6 different countries in FY12



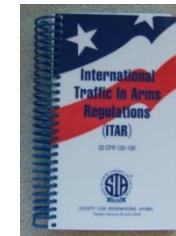
- **Data Mining**

- Developing methods to leverage site visits & conferences



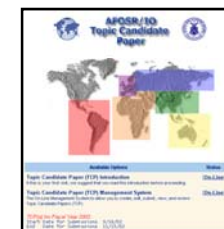
- **Tech Security**

- AFOSRI 61-3, ITAR – EAR training, FDO



- **DC Area IO Representative**

- Developing ties and leveraging initiatives with other DC agencies
- Developing new initiatives with local PO's
- Interface to DC embassies
- AFOSR host to visiting international delegations





AFOSR Space Group



Develop & Coordinate World-wide Strategy and Investments in Basic Space Science and SSA

Members:

- **Lt Col Barry Behnken, ION**
- **Lt Col Kevin Bollino, IOE/EOARD**
- **Dr. Tom Caudill, IOE/EOARD**
- **Mr. Jim Fillerup, IOS/SOARD**
- **Dr. Kent Miller, RTB – AFOSR Tech Area Lead**
- **Dr. Rengasamy Ponnappan, ION**
- **Dr. Ingrid Wysong, IOA/AOARD – Space Group Facilitator**

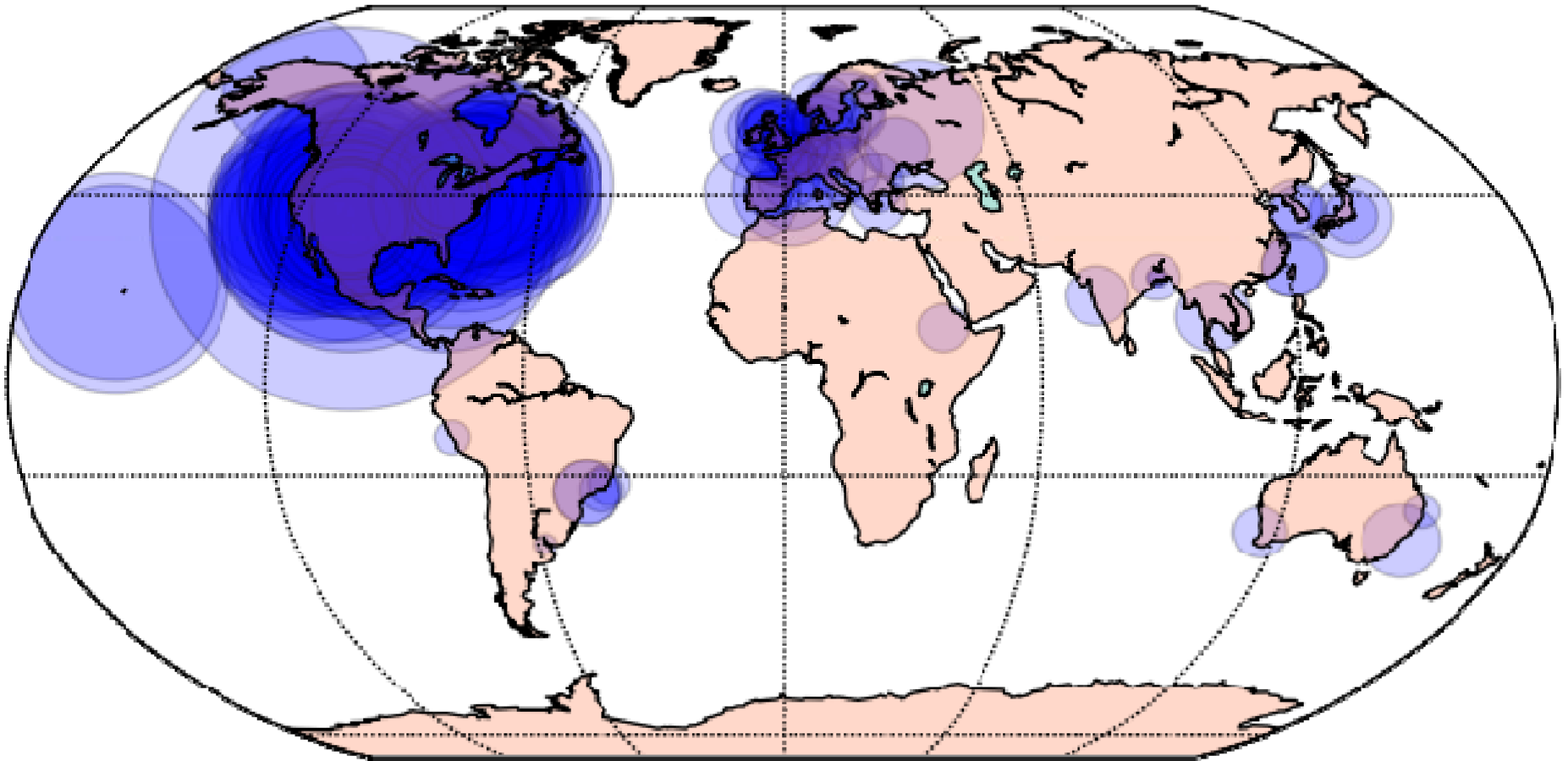
Share information, monthly virtual meetings and documents folder:

- **TD interests and research needs**
- **Awareness by all of existing and planned grants, Other agency activities**
- **Worldwide science state-of-the-art, Data mining**

Develop Topics for next research focus areas



AFOSR Space Group projects: Worldwide



This includes all grants (traditional, conferences, YIP, lab tasks, AFIT, AFA, STTR, DURIP) active since 1 Jan 2012.
Both FY2012 and FY2013 money.



Strategy, cont.



- IO strategy will try to combine a bottoms-up and top down approach; i.e., Global Horizons, AF/ST
- Ultimately, some regular assessment of progress is required
- Measuring progress will be challenging

Limited IO resources make it imperative we spend them where potential payoff is highest



Plans for remainder of FY13



- **Standardization, where appropriate, of IO practices**
 - **Communication, People, Planning, Tasking, Tracking**
 - **Already seeing progress in Windows on Science and financial processes**
- **Retuning all of our roles—*strategy, awareness, access***
 - **Overseas--IOE, IOA, IOS**
 - **Know your AOR, science and how it fits into a global picture**
 - **Arlington--ION**
 - **combining old and new tasks to best support all of IO**
 - **ESEP, WOW, international agreements, developing international initiatives, “1-800-AFOSR international”**
 - **external/internal communication, engagement within DC, data mining, ‘hard drive’ for IO**





- Questions?
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