

DAVID TITLEY

523 Walker Building, University Park PA, 16803. Phone: 814-867-4750. E-mail: dwt12@psu.edu

EDUCATION

The Naval Postgraduate School

Ph.D. in Meteorology **1998**

Dissertation: Intensification and Structure Change of Super Typhoon Flo as Related to the Large-Scale Environment

The Naval Postgraduate School

M.S. in Meteorology and Physical Oceanography (with distinction) **1992**

Thesis: A Diagnostic Study of Rapidly Developing Cyclones Using Surface-based Q Vectors

The Pennsylvania State University

B.S. in Meteorology **1980**

PROFESSIONAL EXPERIENCE

PROFESSOR OF INTERNATIONAL AFFAIRS

2016 - present

The Pennsylvania State University, School of International Affairs

ADJUNCT SENIOR FELLOW

2014 – 2016

Center for New American Security, Washington D.C.

PROFESSOR OF PRACTICE IN METEOROLOGY and

DIRECTOR, CENTER FOR SOLUTIONS TO WEATHER AND CLIMATE RISK

2013 - present

The Pennsylvania State University, Department of Meteorology and Atmospheric Science

- ▶ Founding Director, Penn State Center for Solutions to Weather and Climate Risk

DEPUTY UNDERSECRETARY OF COMMERCE FOR OPERATIONS

2012 - 2013

- ▶ The Chief Operating Officer of the National Oceanic and Atmospheric Administration (NOAA)

ASSISTANT DEPUTY CHIEF OF NAVAL OPERATIONS FOR INFORMATION DOMINANCE

2012

- ▶ Responsible for programming \$14B annual budget in the areas of naval communications, unmanned vehicles and sensors, cyber and electronic warfare, intelligence, and meteorology and oceanography.

OCEANOGRAPHER OF THE NAVY; NAVIGATOR OF THE NAVY; DIRECTOR, NAVY SPACE AND MARITIME DOMAIN AWARENESS;

DIRECTOR TASK FORCE CLIMATE CHANGE

2009-2012

- ▶ Initiated and led the Navy's Task Force on Climate Change.
- ▶ Conceived and executed the first-ever meeting of all Arctic Nations' Security Forces in Oslo, 2011.
- ▶ Managed \$1.5B+ program across the Future Years Defense Program. Grew program in Fiscal Year 2013 despite overall decline in Navy and Defense budget.
- ▶ Guided the only new program (Earth Systems Prediction Capability) in the \$14B directorate through bureaucracy and into President's Budget for Fiscal Year 2013.
- ▶ Advanced near-term capability (Doppler Weather Radar) expeditiously into operation at sea by emphasizing what we can do instead of highlighting barriers and obstacles.

COMMANDER, NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND

2007-2009

SENIOR LEADERSHIP: Led 3000+ sailors and civilians (\$600M/year budget) operating world-wide to ensure safety of life and property as well as provide mission effectiveness weather, ocean, and surveillance services to the US Navy.

CHIEF OPERATING OFFICER, NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND

2005 - 2007

- ▶ Led 1000 sailors and civilians providing 24/7/365 worldwide weather and ocean services to US and allied Navies.

COMMANDING OFFICER, FLEET NUMERICAL METEOROLOGY AND OCEANOGRAPHY CENTER

2004 - 2005

SENIOR MILITARY ANALYST, OFFICE OF NET ASSESSMENT, OFFICE OF THE SECRETARY OF DEFENSE

2003 - 2004

OPERATIONS OFFICER, US COMMISSION ON OCEAN POLICY

2002 - 2003

U.S. NAVAL OFFICER

1980 - 2002

PEER-REVIEWED PUBLICATIONS AND PAPERS

2018, Walker, A, **DW Titley**, ME Mann, and RG Najjar. "A Fiscally Based Scale for Tropical Cyclone Storm Surge." *Weather and Forecasting*, {in review}

2015, Zysk, K., and **DW Titley**. "Signals, Noise and Swans in Today's Arctic." *The SAIS Review of International Affairs*, 25 (1) 169-181.

2015, Reed, AJ, Mann, ME, Emanuel, and **DW Titley**. "An Analysis of Long-Term Relationships Among Count Statistics and Metrics of Synthetic Tropical Cyclones Downscaled from CMIP5 Models." *Journal of Geophysical Research: Atmospheres* 120 (15), 7506-7519.

2014, **Titley, David W.** "Ghosts from the Past", *Science*, 345 (6195), 361-361.

2010, **Titley, David W.**, and Courtney C. St. John. "Arctic Security Considerations and the U.S. Navy's Roadmap for the Arctic." *Naval War College Review*, 63:35–48, 2010.

2000, **Titley, David W.**, and Russell L. Elsberry. "Large Intensity Changes in Tropical Cyclones: A Case Study of Supertyphoon Flo during TCM-90." *Monthly Weather Review*, 128:3556-3573, 2000.

1994, Nuss, Wendell A., and **David W. Titley**. "Use of Multiquadric Interpolation for Meteorological Objective Analysis." *Monthly Weather Review*, 122:1611-1631, 1994.

1994, Nuss, Wendell A., and **David W. Titley**. "Diagnosis of Oceanic Cyclogenesis using Surface-Based Q Vectors." *Weather and Forecasting*, 9 (1), 136-155.

OTHER PUBLICATIONS AND PAPERS

2017, **David W Titley**. "Why is Climate Change's 2 Degree Celsius Limit so Important?" *The Conversation*, 22 August 2017.

2017, **David W Titley**. "Credible Climate Scientists Need to Boycott Biased Congressional Hearings." *Washington Post* Op-Ed, 28 March 2017.

2017, Krauss, Lawrence M., and **David W. Titley**. "Thanks to Trump, the Doomsday Clock Advances Toward Midnight." *New York Times* Op-Ed, 26 January 2017.

2016, **David W Titley**. "A Military View on Climate Change: It's Eroding our National Security and we should Prepare for it." *The Conversation*, 6 October 2016.

2016, **David W. Titley**. "Eyes in the Sky: Cutting NASA Earth Observations would be a Costly Mistake." *The Conversation*, 30 November 2016.

2016, **David W. Titley**. "To President-Elect Trump: Support our Vets, Build a Resilient Infrastructure." *Washington Examiner* Op-Ed, 11 November 2016

2016, **David W. Titley** and Jon Nese. "Senate Weather Bill that Supports Forecast Improvement can Benefit all Americans." *Washington Post* Op-Ed, 23 September 2016.

2015, **David W. Titley**. "Climate Change Threatens Security at Home and Abroad." *New York Times* Op-Ed, 2 September 2015

2015, **David W. Titley**. "As the Arctic Melts, the US Needs to Pay Attention." *The Conversation*, 9 January 2015.

2014, **David W. Titley**, "Climate Change Threatens National Security." *Pittsburgh Post-Gazette* Op-Ed, 5 July 2014.

2014, Elizabeth Finkel, "Battle Stations for an Ice-Free Arctic" {Interview} *Cosmos*, 02 June 2014

2014, Eric Holthaus, "Climate Change War is not a Metaphor" {Interview}, *Slate*, 18 April 2014

2014, **David W. Titley** and David Slayton. "Time for Real Leadership on Climate Change, Energy, National Security." *Fox News Opinion*, 31 March 2014

2013, **David W. Titley**, "No Tropical storms over Labor Day weekend", *Washington Post*, 3 September 2013.

SELECTED PRESENTATIONS

TED2017 Speaker (April 2017, Vancouver BC). TED talk on Climate & Security released 15 November 2017 <http://go.ted.com/davidthitley>

Presented at TEDx Pentagon 2011 (<http://www.youtube.com/watch?v=7udNMqRmqV8>)

Congressional testimony, 2010, 2011, 2013, 2015 and 2017

http://democrats.science.house.gov/sites/democrats.science.house.gov/files/documents/131210%20--%20Titley%20House_Science_Climate%20Testimony.pdf

<http://www.commerce.senate.gov/public/index.cfm/hearings?ID=CA2ABC55-B1E8-4B7A-AF38-34821F6468F7>

https://democrats-science.house.gov/sites/democrats.science.house.gov/files/documents/07.12.17%20-%20Titley%20House_Science_Climate_Security_Testimony_.pdf

Invited Keynote / Panel speaker before over 75 academic, national and international military, industry, and professional organizations in eight countries in 2016 and 2017.

Invited by Chief of Naval Operations to Lead ½ Day session on Climate as a Maritime Security Risk at U.S. Navy International Sea Power Symposium (ISS), Newport RI 2014. Briefed 70 Heads of Navies on these emerging risks.

Commencement address, University of Alaska, Fairbanks May 2011

Addressed UN Climate Change Conferences in Copenhagen, Cancun, and Durban (e.g., http://www.youtube.com/watch?v=39Np_kCplxc) as part of official U.S. Department of Defense delegation

Multiple National Public Radio and NPR-affiliated appearances (e.g., Science Friday, Weekend Edition, All Things Considered, Morning Edition, 'To the Point')

<http://www.sciencefriday.com/program/archives/201103042>

<http://www.npr.org/2017/03/09/519499975/epa-head-scott-pruitt-doubts-basic-consensus-on-climate-change>

<http://www.npr.org/2014/10/19/357341772/dod-climate-change-is-a-volatile-factor-in-international-security>

<http://www.kcrw.com/news-culture/shows/to-the-point/obama-visits-the-arctic-circle#seg-climate-change-creates-a-new-cold-war-in-the-arctic>

<http://www.npr.org/2015/08/05/429773990/russia-plants-its-flag-on-arctic-expanse-including-north-pole>

Quoted frequently in National Media:

<https://www.economist.com/news/united-states/21737267-another-thinks-it-hoax-one-arm-trump-administration-thinks-climate-change>

<https://www.nytimes.com/2017/01/26/opinion/thanks-to-trump-the-doomsday-clock-advances-toward-midnight.html>

<https://www.nytimes.com/2016/10/20/science/9-cities-to-live-in-if-youre-worried-about-climate-change.html>

<https://www.nytimes.com/2017/11/09/climate/fema-flooding-trump.html>

<https://www.nytimes.com/roomfordebate/2015/09/02/whats-the-greatest-threat-to-us-national-security/climate-change-threatens-security-at-home-and-abroad>

<https://www.politico.com/agenda/story/2016/06/republicans-trying-to-stop-pentagon-climate-plan-000149>

<https://www.americansecurityproject.org/holland-and-rear-adm-titley-ret-featured-in-politico/>

<http://www.newsweek.com/harvey-approaches-trump-weather-cuts-loom-654844>

BOARDS & COMMITTEES

| | |
|---|-----------------------|
| Chair , National Academies Climate Change Initiative | 2018 – present |
| Council On Strategic Risks, Member Board Of Directors | 2018 - present |
| New America Phase Zero Project Advisory Board | 2018 – present |
| National Academy of Science Board on Atmospheric Science and Climate | 2017 – present |
| Citizens’ Climate Lobby Advisory Board | 2015 – present |
| Center for Naval Analysis (CNA) Military Advisory Board | 2013 - present |
| Center for Climate and Security Advisory Board | 2013 - present |
| Penn State Applied Research Lab Advisory Board | 2013 – present |
| Hoover Institute Arctic Security Initiative | 2012 - present |
| Science and Security Board, Bulletin of the Atomic Scientists | 2014 - 2018 |
| Penn State University Department of Meteorology Department Advisory Board | 2010 – 2017 |
| Center for Ocean Solutions (Stanford University) Advisory Board | 2014 – 2016 |

| | |
|---|--------------------|
| <u>Chair</u> , National Academy of Science Committee: Attribution of Extreme Weather Events to Climate Change | 2015 – 2016 |
| National Academy of Science Committee: Technical Evaluation of Geoengineering | 2013 – 2015 |
| <u>Co-Chair</u> , National Academy of Science Committee: Decadal Survey of Ocean Sciences | 2013 – 2015 |
| Center for Research on Environmental Decisions (CRED) Advisory Board | 2013 – 2014 |
| NOAA Science Advisory Board | 2011 – 2012 |

MEMBERSHIPS

Fellow, American Meteorological Association
Member, United States Naval Institute
Member, American Geophysical Union