CCMC’s Role in Education

- REDI: CCMC’s flagship program
- Student Research Contest (Rebekah Evans)
- Active participants in all kinds of Summer/winter Schools
- Involved in work-study internship program for high schoolers
- Don Bosco Cristo Rey
- National Space Club (competitive high school students)
- Academic year research program (college and high school)
CCMC/SWRC–Universities Space Weather Research Education & Development Initiative (SW REDI)

- Promote space environment awareness as an important component of the new millennium core education.
- Facilitate establishment of SW programs at universities world-wide.
- Involve undergraduate students in support of CCMC/SWRC projects, NASA’s missions & NSF facilities.
- Engage students in activities that develop skills and experience beneficial for any future career pursuit.

- Provide space weather training and space environment situational awareness that is critical for NASA mission operators and engineers

Y. Zheng (Project Lead), A. Pulkkinen, M. Kuznetsova, L. Mays, A. Taktakishvili, R. Evans, A. Chulaki, M. Maddox, M. Mendoza
Student assistants: M. Romano, J. Bryant, E. Quigley
SW REDI Training

- Initial intent: train CCMC/SWRC interns
- Open to everybody, international participants are welcome
Highlights of SW REDI Training

- 1<sup>st</sup> SW REDI 2-wk long summer boot camp in June 2013 (~35 participants, scientists, researchers, undergraduate, professors)
- 1<sup>st</sup> SW REDI 2-day long winter boot camp on 28-29 Jan 2014 (~80 participants, mostly mission operators) for mission operators and engineers
- 2<sup>nd</sup> SW REDI ~2 wk long summer boot camp in June 2014 (2-12 June 2014)
Uniqueness of SWREDI Internship Opportunity

- Nice blend of students with different backgrounds (SW – space weather forecasting, SW- research, SW-software development, SW-media)
- Part-time continuous internship/traineeship opportunity (Michel since summer 2012, DK since summer 2013)
- Advanced internship opportunity
Interns went through SWx training - Summer 2012

Michel Romano
Josh Bryant

Software development interns
Justin Boblitt
Jack LaSota

James Wang
Mary Aronne

Andrea Karelitz
Axel Garcia
Interns went through SWx training - Summer 2013

**SW-ops interns (undergraduate)**

- Corey Koller
- Dhanesh Krishnarao
- Zak Titus
- Anthony Pritchard

**High school interns via National Space Club**

- Rachel Morgan
- Dan
- Megha Pandya

**Advanced (2nd year) SW-Osp interns certified as Level 2+ space weather forecasters (16h/w)**

- Caitlin Bailey
Fun
Left themselves behind
Accomplishments

• 5 certified students working with us year-around and get compensated for their SWx monitoring/forecasting duties over the weekends and evenings
• Space weather Research
• Software development (STEREO CAT, iswa mobile app)
• Quality videos
James Wang

- High school intern – summer 2012 and later the academic year intern Fall 2012 – May 2013
- Admitted into UCLA starting Fall 2013
- The internship experience at CCMC has helped James securing an internship opportunity at a chemical engineering lab there at UCLA. He will perform research in the fields of chemical kinetics and catalysis in summer 2014
Dhanesh Krishnaraao

- SWx forecaster intern in summer 2013, also embarked on some research projects
- Will be working at CCMC as an advanced intern this summer (assisting SW REDI boot camp and research)
- Jacob Kastner Memorial Scholarship - 2014 American University
- Presented a poster at the 24th Annual Robyn Rafferty Mathias Student Research Conference
- Presenting a poster at the April APS Meeting in Savannah, GA with funding from American University Provost, College of Arts and Sciences Grant, and the Department of Physics
- Both posters on research on the prominence of sulfur in interstellar extinction done under UJ Sofia
Corey Koller  UMD – College Park

- SWx forecaster intern in summer 2013 and working part-time with CCMC/SWRC since then
- Achieved deans list  Fall 2013 – May 2014
- The upper-class University of Maryland honor society
- Summer internship opportunity at Aberdeen Proving Grounds – US Army (NASA experience has helped!)
Michelangelo Romano

- SWx forecaster intern since summer 2012 and working part-time with CCMC/SWRC since then in different capacities – research, education and forecasting
- Summer internship opportunity at one of the CUA physics labs to broaden research experiences
High school interns research project achievement

• Kiran Kang
  • Yale outstanding award in physics & astronomy
  • Lockheed Martin second place award
  • Excellence in physics award
  • Best research award
  • Student travel grant to Fall 2013 AGU

• Richie Supkowski
  • First place in Regional PJAS competition
  • Excellence award for Earth and Space Science
Work-study internship program

- Don Bosco Cristo Rey high schoolers
  - Jenny Mendez-Guerrero (Fall 2012 – May 2013)
  - Joshua Villas (Fall 2012 – May 2013)
  - Erica Chukwu (Fall 2013 – May 2014)
Academic year research program for high school students

- Jimmy Wang
- Kiran Kang
- Min Kang
- Richie Supkowski
- Daniel Comberiate
Student Research Contest

- Existing categories
  - Solar-Heliospheric - SHINE
  - Magnetospheric - GEM
  - Ionosphere-Thermosphere CEDAR

- New category
  - Space Weather - Space Weather Workshop

Rebekah Evans (lead)
2013 CCMC Student Research Contest Winners

Colin Komar, West Virginia University
Locating Magnetic Reconnection at Earth’s Dayside Magnetopause in Global MHD Simulations, presented at GEM in June 2013, paper accepted to JGR, July 2013.

Soojeong Jang, Kyung Hee University, Korea,
Comparison of the WSA-ENLIL Model with Three Cone Types, presented at SHINE in June 2013 and SPD/AAS in July 2013.