Resume – Dr. Stefi Baum, 8/20/10

Dr. Stefi Alison Baum
Director, Department Chair, and Professor, Xerox Chair
Chester F. Carlson Center for Imaging Science
54 Lomb Memorial Drive
Rochester Institute of Technology
Rochester, NY 14623-5604

Place of Birth		Chicago Illinois
High School	June 1976	Princeton Public High School, Princeton, NJ
College	June 1980	Harvard University, Cambridge, MA B. A. Physics, cum laude
Graduate School	Dec 1987	University of Maryland, College Park, MD Ph.D. Astronomy

Post-Degree Education

American Council on Education:
- Chairing the Academic Department

MIT-Sloan Executive Series:
- System Dynamics for Senior Managers
- Managing Technical Professionals and Organizations
- The Innovative Organization

Harvard-MIT-Tufts Program on Negotiation, Executive Ed Series:
- Program on Negotiation for Senior Executives
- Dealing with Difficult People and Difficult Situations

United States Foreign Service Institute:
- Global Issues

Pardee RAND Graduate School:
- New Security Challenges: Policy Issues and Analytic Approaches

Expertise

Extensive leadership experience in a range of environments including government, national centers, academia and in highly interdisciplinary environments. Expertise working at the interface of engineering and science, and at the interface of engineering, science and public policy. Experience with university pedagogy in science, engineering and innovation, K-12 STEM (Science Technology Engineering and Math) education and public outreach, and programs to recruit and retain women and minorities in STEM careers. Well versed in a range of scientific and engineering issues and disciplines, the application of scientific, statistical, and engineering methodology, and management of large programs.

Research expertise in imaging science and astrophysics, specializing in understanding the origin and nature of active galaxies and clusters of galaxies, the development and deployment of astronomical instrumentation and missions, and the development of algorithms for fMRI brain imaging. Over 175 refereed journal articles published and 10 PhD students mentored.

Volunteer Work: Habitat for Humanity (occasional), Lacrosse Coach

Languages: English – proficient (native language), Dutch – moderate proficiency,
French – some proficiency

Security Clearance Top Secret (currently inactive)

Direct Leadership and Management Experience

- Director and Department Head, Chester F. Carlson Center for Imaging Science (CIS), Rochester Institute of Technology. CIS is a highly interdisciplinary academic education and research center, providing undergraduate education, post graduate PhD and masters programs and extensive research activities in a range of imaging related fields including remote sensing, detector development, biomedical imaging, color science, visual perception, astronomy, printing, and document reconstruction. CIS has ~50 faculty (half are full time faculty in the Department and half are faculty drawn from six colleges of the University with joint appointments in CIS), and over 40 research and administrative staff.
- Division Head, Engineering Software and Services Division, Space Telescope Science Institute. Responsible for the leadership and management of 140 software developers, testers, systems engineers, scientists and hardware engineers supporting the Hubble Space Telescope and the James Webb Space Telescope.
- Branch Chief/Team Lead. Management and Leadership responsibility for 25 PhD astronomers and technical staff supporting the development and operation of an advanced scientific instrument for the Hubble Space Telescope, the Space Telescope Imaging Spectrograph.
- Lead Archive Scientist –Provided scientific oversight of the HST archive development and deployment.

Direct Government Experience

- Diplomacy Science Policy Fellow, United States Dept. of State, Economics Bureau, Office of Agriculture, Biotechnology, and Textiles, sponsored by the American Institute of Physics through the American Association for the Advancement of Science.

Board Experience

- Trustee, Universities Space Research Association (USRA) (active), past member of the USRA Board Compensation and Strategic Planning Committees, current member of USRA Homeland and National Security Committee.
- Board of Governors, Great Lakes Research Consortium (active).
- VP, Board of Directors, Society for Imaging Science and Technology (term completed)

External Grant Support (complete list provided at end of resume)

- Grants totaling just under 5 Million won during past six years, ~40% as Principal Investigator. Currently just over 3 Million dollars of additional grants have been submitted and are pending review.
    - NYSTAR Faculty Development Grant, PI - $729,000, Sensor Development
    - Scientific Research Grants, totaling over 3.3 Million
    - NSF Professional Masters Grant, "Science Master's Program: Decision Support Technologies for Environmental Forecasting and Disaster Response", ~$660,000
    - An NSF Advance PAID Grant, "Establishing the Foundation for Future Organizational Reform and Transformation", ~$200,000
    - K12 Education and Outreach grants totaling ~$800,000

External Gift Support

Over the past 6 year period, the Chester F. Carlson Center for Imaging Science has received 9 Million dollars of donations in support of our programs, students, and research, as recorded by the RIT Development Office.

PROFESSIONAL TIMELINE

Timeline	Professional Career	Academic Career
7/04 - present	Director, Center for Imaging Science, Rochester Institute of Technology	Full Professor, RIT, Endowed Xerox Chair since 2007.
11/02-6/04	Senior Science/Diplomacy Fellow, ***US Dept. of State*** & American Institute of Physics Diplomacy Fellow Program	leave of absence from STScI
9/02 - ongoing		Co-I & Lead Operations Scientist, NIRCAM on JWST
10/02		Promoted to Full Astronomer, Space Telescope Science Institute (***STScI***)
11/99 – 10/02	Division Head, Engineering & Software Services Division, ***STScI***	
9/99 -11/99	Deputy, Science and Engineering Support Division, ***STScI***	
1/99 - 9/99		Sabbatical @ ***Princeton Univ.***
2/96 -12/98	Branch Chief, Spectrographs Team, ***STScI***	Awarded tenure 1997 ***STScI***
1/95 – 2/96	Space Telescope Imaging Spectrograph Scientist, Servicing Mission Office, ***STScI***	
10/91 - 1/95	Archive Scientist, ***STScI***	Promoted to Associate Astronomer 1994 ***STScI***
9/90-10/91		Hubble Fellow, ***Johns Hopkins University***
9/87-9/90		Postdoctoral Research Fellow, ***Netherlands Foundation for Research in Astronomy***

Addresses for Employment History

- Carlson Center for Imaging Science, College of Science, ***Rochester Institute of Technology***, 54 Lomb Memorial Drive, Rochester NY 14623
- Office of Agriculture, Biotechnology & Trade Policy, Economics & Business Bureau, ***US Dept of State***, 2201 C Street NW, Washington DC 20520
- ***Space Telescope Science Institute***, 3700 San Martin Dr., Baltimore, MD 21218
- ***Johns Hopkins University***, Department of Physics and Astronomy, Bloomberg Center, Homewood Campus, Baltimore, MD 21218
- ***Netherlands Foundation for Research in Astronomy***, P. O. Box 2, 7990 AA Dwingeloo, NL

Fellowships and Awards

- RIT Million Dollar Club– for securing more than 1 Million dollars in external grants and contracts (2005)
- American Institute of Physics – US State Department Fellowship 2002/2003
- STScI Individual Achievement Award, for Management and Leadership (2002)
- Rolex Achievement Award (1999) – given annually to one female and one male college lacrosse player for career achievements supporting society.
- NASA Excellence Award, Hubble Space Telescope Servicing Mission 3A (1999)
- STScI Group Achievement Award, Space Telescope Imaging Spectrograph Team, (1996)
- STScI Individual Achievement Award, Space Telescope Imaging Spectrograph (1996)
- STScI Group Achievement Award, Data Quality Project (1996)
- STScI Individual Achievement Award, Archive Development/Deployment (1993)
- STScI Group Achievement Award, Archive Development/Deployment (1993)
- Annie Jump Cannon Award, awarded annually to a young female astronomer for Scientific Excellence and Promise (1993)
- Junior Research Fellowship, National Radio Astronomy Observatory (1985)

Major Committee Memberships (over past 4 years)

- Chair, American Astronomical Society Awards Committee (active)
- Member, James Webb Space Telescope Science Advisory Committee (active)
- Member, Science Team, Near Infrared Camera, James Webb Space Telescope (active)
- Chair, National Optical Astronomy Extragalactic Time Allocation Committee (active)
- Member and Chair, National Astronomy and Ionospheric Center Arecibo Visiting Committee (term completed)
- Member and Chair, Associated Universities Incorporated (AUI), National Radio Astronomy Observatory Visiting Committee (term completed)
- Member, (i) Operations Advisory Committee and (ii) Science Advisory Group, Extended Very Large Array Telescope, National Radio Astronomy Observatory (term completed)

- Advisory Board, Program for Innovation and Entrepreneurship, RIT (term completed)
- Advisory Board, School of Mathematics and Statistics, RIT (term completed)
- Member, National Research Council of Canada, Peer Review of the Herzberg Institute of Astrophysics (completed)
- Member, Director's Review, Dark Energy Camera and Survey, Fermi National Laboratory (completed)
- Member, NASA Senior Review (completed)
- Member, Associated Universities Incorporated Operations Advisory Group (completed).

Formal Task Force and Working Group Activities (past 4 years)

- Chair, Rochester Institute of Technology Search Committee for Director of the new PhD program in Sustainability (active)
- Chair, University Academic Research Space Policy Definition Task Force, Rochester Institute for Technology (active).
- Partner, Partnerships for Plurality, Rochester Institute of Technology
- Member, Rochester Institute of Technology's Research Steering Committee (active)
- Member, Rochester Museum and Science Center K-12 Education Task Force (active)
- Member, Rochester Museum and Science Center Planetarium Task Force (term completed)
- Creator and Chair, College of Science Distinguished Speaker Series (active)
- Member, Rochester Institute of Technology's Freshman Summer Reading Group Task Force (term completed)
- Member, Rochester Institute of Technology President's Women's Advisory Council (term completed)
- Member, Rochester Institute of Technology, Provost Search Committee (term completed)
- Member, Rochester Institute of Technology, Creativity and Innovation Working Group (term completed)
- Member, Innovation Curriculum Working Group (term completed)

Curriculum Development, Teaching, Education and Public Outreach (past 4 years)

- Co-Developer, Innovative Freshman Experience; Build an Imaging Instrument, Rochester Institute of Technology
- Co-Developer and teacher, Frontiers of Science, general education course, Rochester Institute of Technology
- Collaborator and teacher, Honors Curriculum Collaborative Creativity and Innovation Program, "Social Networking", Rochester Institute of Technology.
- Co-Developer, new PhD Program at Rochester Institute of Technology, Astrophysical Science and Technology (initiated 9/2008), served as co-Director of this PhD program til 2009.

- Collaborator, Insight Lab for Science Outreach and Learning Research, Rochester Institute of Technology, regularly engages 5-15 undergraduates in research each semester
- Lead, "Reach for the Stars" science outreach program with the Girl Scouts of Western NY
- Collaborator – "Stepping Stones to Research" with local high school
- Collaborator – "Learning Science through Innovation and Creativity: Workshops for Families"
- Participant, yearly summer high school intern program sponsored by the Center for Imaging Science at Rochester Institute of Technology (active)
- Engaged with North Star Center in STEM Summer Program for prefreshman. The North Star Center exists primarily to improve the retention of underrepresented populations.
- Member, Curriculum Committee, Sustainability Institute, Rochester Institute of Technology
- Co-Developer, PhysCalc integrated bridge course, to prepare students for the university physics and calculus sequence, Rochester Institute of Technology.

Meetings co-Organized

- Analysis of Emission Lines, STScI May Symposium 1993
- Women in Astronomy, IAU General Assembly Session 1994
- NGC1068 – Galaxy, Starburst and AGN 1996
- Galaxies at the Highest Resolution, IAU Symposium 1999
- National Academy of Science workshop on Global Challenges and Directions for Agricultural Biotechnology, 2004
- The Extended Very Large Array Vision: Galaxies through Cosmic Time, 2008

Research

- Space and ground based observations of Active Galaxies, Galaxy Clusters, & High Redshift Systems; Analysis and interpretation of the origin and nature of activity in galaxies and the evolution of galaxies and galaxy clusters.
- Observational techniques: Optical and ultra-violet spectroscopy and imaging, radio interferometric imaging and spectroscopy, X-ray imaging.
- Engaged in activities to develop astronomical algorithms, hardware, and missions.
- Development of algorithm and statistical techniques for the analysis of fMRI brain imaging data used to study schizophrenia.
- Over 170 scientific papers published in refereed journals.
- Over 75 professional colloquia given at Universities and Scientific Conferences

Community Service

- Have served and continue to serve on numerous NASA & NSF scientific review panels.
- Served on Financial Review Committees for HST and for Chandra.
- Served on American Astronomical Society Employment Committee
- Serve as referee for professional journals on an ongoing basis

Professional Societies

- American Astronomical Society
- American Association for the Advancement of Science
- American Institute of Physics
- International Astronomical Union
- SPIE

Graduate Theses Supervised or Co-Supervised

- Jack Gallimore – "The Kinematics of the Near Nuclear Gas in Seyfert Galaxies" 1995, U. Maryland, PhD
- Ed Colbert – "Superwinds in Seyfert Galaxies" 1997, U. Maryland, PhD
- Chun Xu – "VLBA and ROSAT Imaging of Nearby Radio Galaxies: Towards Understanding the Nature of Radio Activity", masters received, PhD on hold, U. Maryland
- Gijs Verdoes-Klein – "Nuclei of Nearby Radio Galaxies: Interplay Between Activity and Galaxy Structure" – 2001, Leiden, PhD
- Jacob Noel-Storr – "Kinematics of the Central Regions of Nearby Radio Galaxies: Constraining the Demographics of Black Holes" – 2004, Columbia Univ, NY, PhD
- David Russell – "Ultraviolet Observations of Radio Jets: Constraints on Jet Physics" – 2004, University of Manchester, PhD
- Avanti Tilak – "Chandra and VLBA Observations of Low Luminosity Radio Galaxies" –Physics, Johns Hopkins University, PhD
- George Privon – "Emission Line Imaging of Powerful Radio Galaxies", Rochester Institute of Technology, Imaging Science, masters.
- Andrew Michael – "Classification of Schizophrenia Using fMRI Imaging" - Rochester Institute of Technology, Imaging Science, PhD
- Linpeng Cheng – "Interpixel Capacitance in IR Arrays for Astronomy - Implications for the James Webb Space Telescope", Rochester Institute of Technology, Imaging Science, Masters
- Grant Tremblay – "The Evolution of Powerful Radio Galaxies", Rochester Institute of Technology, Astrophysical Science and Technology, PhD, current.
- Siddharth Khullar – "Wavelets Applied to fMRI Data in the Analysis of Schizophrenia", Imaging Science, PhD, current.
- David Sarroff - "A Design and Science Case for a 40 Million Dollar, 12 Meter Ground Based Telescope, Astrophysical Science and Technology, PhD, current.

Postdocs Supervised or Co-Supervised

- Esther Zirbel
- Anton Koekemoer
- Marek Kukula
- Andre Martel
- Catherine Buchanan
- Preeti Kharb
- Jake Noel-Storr
- Rupal Mittal (active)